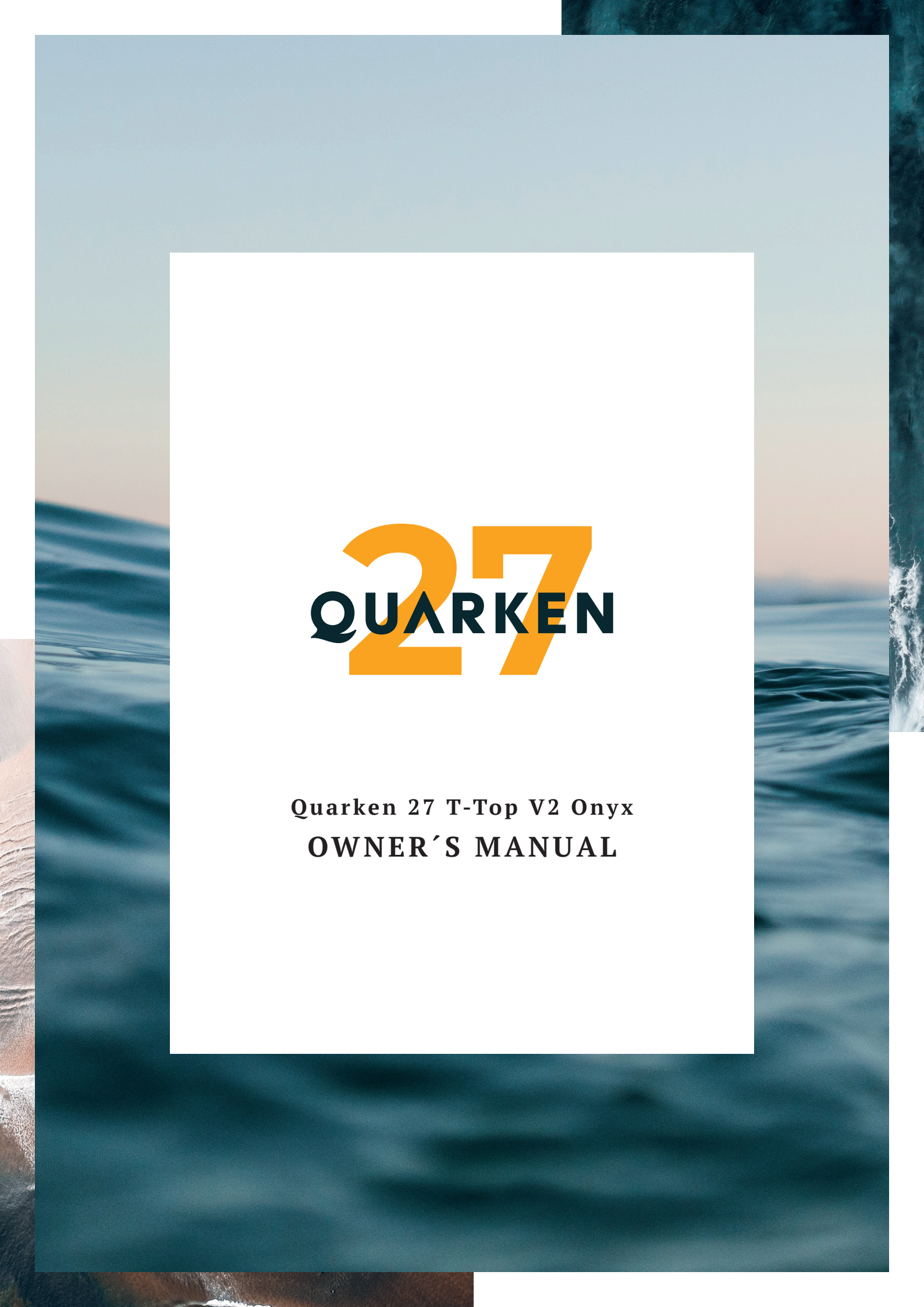


QUARKEN 27

Quarken 27 T-Top V2 Onyx

OWNER´S MANUAL

Table of Contents

1 Introduction

1.1 Your owner's manual

Congratulations on the purchase of your new Quarken boat. Your boat has been designed in a modular way and with best-in-class functionality. This manual introduces you to the boat's features, helps you operate your boat safely and take care of it in everyday use.

This manual does not provide instructions on general boating safety and seamanship. It is your responsibility as the owner of the boat to ensure that you or anyone else operating your boat have the necessary skills for handling the boat and navigating at sea. If needed, your dealer or local yacht clubs can help you find a suitable course.

This manual does not provide detailed maintenance or troubleshooting instructions. Using an authorized servicing company for regular maintenance and in fault situations ensures that your boat will serve you and give you pleasure for years to come.

This boat is complemented with other equipment manufacturers' components and devices. The manuals for these are referred to in this manual. The manuals are available either in the Owner's Bag that comes along with the purchase, or online on the equipment manufacturers' own Web pages.

Consider this manual, along with the other manuals in the Owner's Bag, an integral part of your boat's equipment. Keep the manuals in a secure place and, if you sell your boat, hand them over to the next owner.

The images and text in this manual may differ from your boat's configuration, depending on the selected features. Also, some features are not available for all boat models, while others are included as standard for certain models.

The manual is also available online, and in the chartplotter, if you have selected this accessory. However, it is always advisable to have a paper copy at hand. If you need a new copy, download and print the manual at www.quarken.com.

1.1.1 Safety symbols

The following symbols are used in this manual:

⚠ DANGER Imminent hazard which, if not avoided, **will result in death or serious injury**.

⚠ WARNING Potential hazard which, if not avoided, **could result in death or serious injury**.

⚠ CAUTION Potential hazard which, if not avoided, **might result in minor or moderate injury**.

NOTICE Situation which, if not avoided, **might result in property damage or in an undesirable result**.

NOTICE Situation which, if not avoided, **might harm the environment.**

Call for attention.

1.1.2 Document conventions

This manual uses the following measurement unit conventions:

- By default, all units are in accordance with the International System of Units (SI).
- Where practical, the United States Customary Units (USCS) are added.
- Wind force is given in the Beaufort scale (BFT).
- Speed is given in knots(kn).

The color codes, when used in diagrams, indicate the following:

- Dark or light green: areas above deck
- Gray and dotted lines: areas below deck
- Yellow lines with circled numbers: standard features or equipment
- Gray lines with circled numbers: optional features or equipment.

For symbols used in this manual, see section *1.1.1 Safety symbols on page 4*.

For terms and abbreviations, see section *9.1 Terms and abbreviations on page 76*.

1.2 Owner's responsibilities

1.2.1 Safety-related responsibilities

You as the owner of the boat are responsible for your own and the boat occupants' safety on board.

When at sea, you must also consider the safety of other seafarers.

Read more in section *2 Safety on page 8* about your and the boat driver's responsibilities in terms of:

- Laws and regulations.
- Maintenance and modifications.
- Sufficient boating skills.
- Knowing your boat.

In addition, make sure that you have familiarized yourself with all the safety aspects in this manual.

1.2.2 Environmental responsibilities

As the owner of the boat, ensure that you and your crew know and comply with the environmental laws and regulations in your area.

For tips, see section *8 Considering the environment on page 75*.

1.2.3 Registration

Verify if your dealer has registered your boat. For example, in the European Union and many other countries, even a small motor boat must be registered.

To drive a registered boat, you must usually meet the requirements for minimum age and may also need a separate boat driver's license.

Your dealer or local authorities can provide you information about these requirements in your area.

1.2.4 Insurance

A boat insurance can cover for damage when the boat is in use, transported and stored. As the boat owner, you may also be liable for damages and injuries you or anyone else operating your boat causes.

In some countries, boat insurance is required by law. Your dealer or local authorities can provide you information about insurance requirements in your area.

More detailed information on various insurance alternatives is available from insurance companies.

Check the insurance coverage separately for lifting operations.

1.3 Document copyright and disclaimer

Quarken Boats disclaims any liability related to this document and reserves the right to amend or replace the information at its own discretion without prior notification and liability. Any information in this document may only be used for the purpose specified in this document. In case of conflicting information between this manual and the third-party manufacturers' manuals provided, the

information in the latter will apply. Quarken Boats disclaims any liability related to the said third-party manufacturers' manuals.

1.4 Warranty and general disclaimer

Your new boat is covered by a limited warranty for two (2) years. The terms are detailed in a separate warranty card included in the Owner's Bag. It is important that you read the warranty terms and this owner's manual prior to using your boat for the first time.

In case of any problems, contact your dealer within 14 days while ensuring that no further damage is caused during that time.

Your boat is intended for recreational use only. The boat manufacturer disclaims any liability for the consequences of inappropriate use of the boat.

The warranty does not cover defects caused by, for example:

- Incorrect handling such as:
  - Use in more demanding conditions than the design category specified for the boat.
  - Incorrect storage or mooring.
  - Failing to follow the instructions in the manuals provided.
- Carelessness or negligence.
- Alterations or unauthorized repairs.
- Neglected maintenance.

The equipment manufacturers are directly responsible for the warranty of their equipment.

1.5 Contact information

Your dealer is your main contact in all questions related to your purchase, fault situations and other questions. The contact information is available at www.quarken.com.

The manufacturer's contact details are included on the builder's plate attached to your boat.

2 Safety

2.1 Owner and safety

As the owner of the boat, you are responsible for ensuring that you and your crew, or anyone else operating your boat, take safety seriously. This includes:

- Acquiring the necessary boating and navigation skills before setting out to sea.
- Understanding the safety features and limitations of the boat.
- Being aware of and complying with local laws and safety requirements.
- Proper maintenance.
- Ensuring safety is not compromised by modifications.
- Making sure that the boat is equipped with fire extinguishers before using the boat, according to local rules and regulations.

⚠ WARNING

Neglecting the necessary safety precautions can cost lives. The driver of the boat is responsible for the operation of the boat and the safety of fellow passengers.

Make sure that there is always at least one skilled, nominated driver on board.

For your responsibilities as driver, see section *2.2 Driver and safety on page 9.*

Laws and regulations

You must be aware of the local laws and safety requirements. Many countries have special requirements such as:

- Boat driver's license is mandatory.
- The boat must always have a nominated responsible driver on board.
- All persons on board must wear a personal flotation device at all times when at sea.
- Personal flotation devices must comply with specific requirements.

Your dealer can help you with information about local and international regulations.

Maintenance and modifications

Make sure you have your boat properly maintained to ensure safety and the validity of the warranty.

For maintenance, repair and alteration work, you should always turn to competent and trained workshops. Always maintain your boat properly and consider any deterioration that will occur over time. Changes that can affect the boat's safety features must be assessed, carried out and documented by competent professionals.

⚠ CAUTION

Any change to the boat's centre of gravity, such as a new engine type or poor distribution of heavy equipment, will significantly affect the stability, trim and performance of the boat.

The boat manufacturer disclaims any responsibility for the consequences of unauthorized modifications.

2.2 Driver and safety

As the driver of the boat, you are responsible for ensuring that you and your crew take safety seriously. This includes:

- Acquiring the necessary boating and navigation skills before setting out to sea.
- Understanding the safety features and limitations of the boat.
- Behaving responsibly.

⚠ WARNING

Neglecting the necessary safety precautions can cost lives. The driver of the boat is responsible for the operation of the boat and the safety of fellow passengers.

Make sure that there is always at least one skilled, nominated driver on board.

Boating skills

As the responsible driver, you must:

- Ensure that you and your crew have the necessary boating skills.
  - Know how to maneuver the boat in different weather conditions.
  - Be familiar with the use of all safety equipment.
  - Be capable of taking action in various emergency situations such as person overboard recovery and towing.
  - Read all the applicable instructions before using the boat. The boat may be equipped with devices that are not covered by this manual.
- Drive responsibly.
  - Respect the anticipated wind and wave conditions set by the design category.
  - Remain within the limits of your own boating ability.
  - Never drink and drive.
- Know and obey the rules of the International Regulations for Preventing Collisions at Sea (COLREG). Be aware of local accident reporting requirements.

If needed, sailing schools and clubs regularly organize courses and rescue drills.

⚠ WARNING

Inappropriate use of this boat not compatible with safe boating is strictly prohibited.

- The boat is intended for recreational use only.
- It is always important to adjust the speed and direction of the boat to the sea conditions and to remain within the limits of your own boating ability.
- When using the boat for activities such as water skiing and fishing, you must understand your responsibilities and the risks involved.

Knowing the boat

You must be aware of and understand the following:

- Limitations set out by the boat's design category.
- Capacity restrictions.
  - Never overload the boat.
  - Check the maximum load and number of persons allowed from the builder's plate next to the steering wheel.
- Always make sure that you and the passengers use the designated seating areas while underway.
  - See section *2.5.1 Designated seating and moving areas on page 21* for the exact location of the seating areas.
- Location and content of the warning labels on the boat.
- Location of all the required safety equipment.
  - Ensure all safety equipment is in order and you know how to use it.
  - Keep the necessary safety equipment on board at all times.
  - Have personal flotation devices or life jackets for all passengers.
  - Check section *2.3.1 Safety equipment and emergency exit on page 10* for details.

2.3 Boat's safety features

2.3.1 Safety equipment and emergency exit

The owner of the boat is responsible for ensuring that the safety equipment on the boat meets the rules and regulations of the local authorities and works properly.

The driver must be familiar with the safety equipment and ensure that it is properly used.

⚠ WARNING

- Never obstruct passageways to fire exits and hatches.
- Never obstruct access to safety controls, fuel shut-off valves and main switches.
- Never deliberately or inadvertently block ventilation for compartments or spaces, particularly those containing fixed gasoline engines, fixed gasoline tanks and batteries.
- Never obstruct access to portable fire extinguishers.
- Never modify any of the craft's systems, unless competent to do so.
- Never store gasoline containers or equipment containing gasoline in any area not designated as the specific storage area of gasoline.

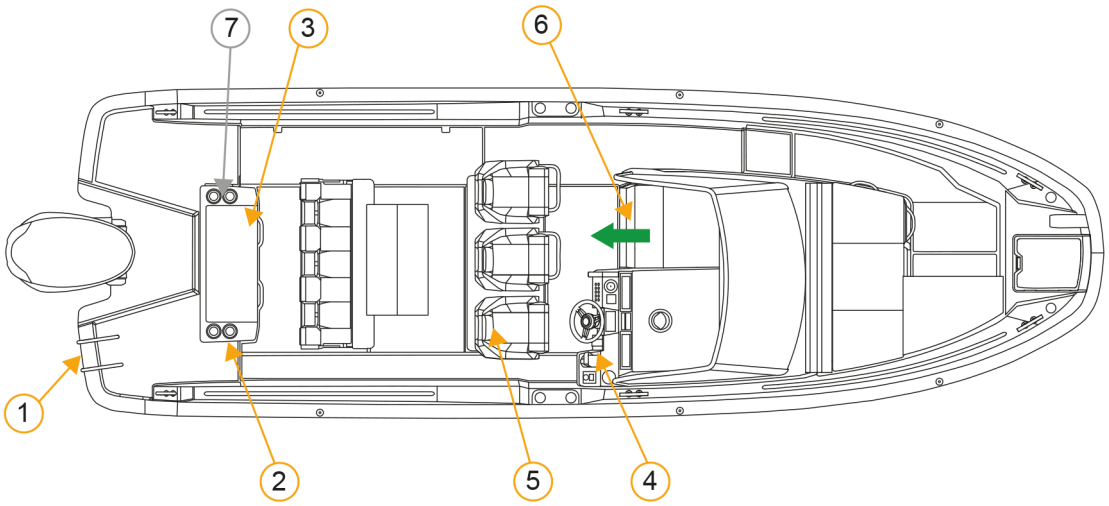


Figure 2.1 Location of safety equipment

1. Swim ladder
2. Main switch panel
3. Place for fire blanket (optional)
4. Engine shut-off switch
5. Recommended place for fire extinguisher
6. Emergency exit
7. LPG cylinder valve (for gas cooker)*

*Optional

The main switch panel includes three switches that must be turned off in case of emergency.

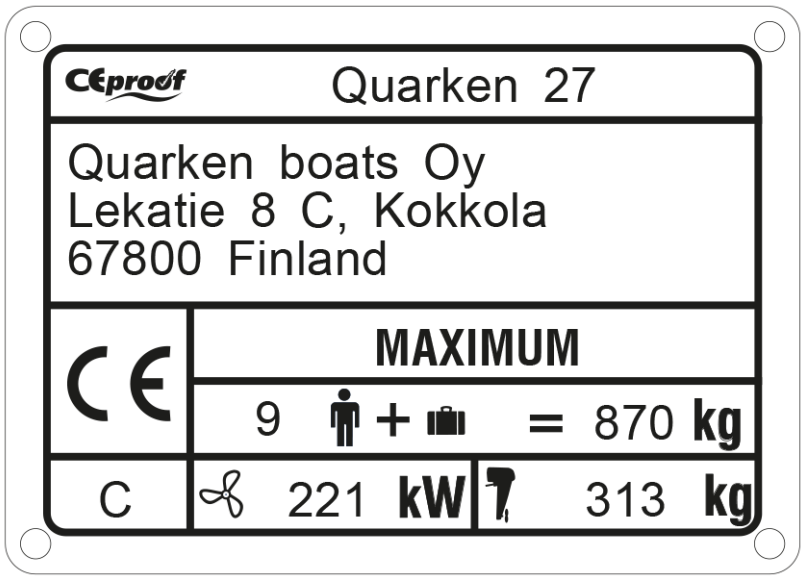
Additional safety equipment

You are responsible for providing the additional safety equipment. There is local variation but many countries require:

- Personal flotation devices (PFD) for all passengers
- Distress signal devices for emergency situations
- Fire blanket
- Other equipment such as bails and lifesavers
- There must be one fire alarm or carbon monoxide monitor on the boat. Check the functioning of the alarm annually by pressing the test button.

2.3.2 Builder's plate

The builder's plate is located in the vicinity of the steering wheel.



In addition to the boat model, it provides important information related to safety:

- Design category defining the limitations of use.
- Maximum load and number of persons allowed on board.
- Maximum engine power and weight.

The maximum load capacity indicated on the builder's plate does not include fuel.

⚠ WARNING

Always respect the limitations of the boat:

- Observe the weather conditions and always stay within the limits of your boat's design category.
- When loading the boat, never exceed the maximum recommended number of persons. Always use the seating provided.
- Regardless of the number of persons on board, the total weight of persons and equipment must never exceed the maximum recommended load.
- Do not exceed the maximum engine power.

2.3.3 Design category

Design categories define the essential safety requirements for the design and construction of a watercraft. These requirements should be met through a conformity assessment procedure before placing a watercraft on the European Union market. The design category is indicated on the Builder's plate.

The design categories (A-D) define the wind force and significant wave height in which the craft is designed to operate in. Your boat's design category, that is stated on the builder's plate, is C.

In category C

- The wind force is no more than 6 on the Beaufort scale (approx. 14 m/s).
- The significant wave height is no more than 2 m.

The significant wave height is the average height of the highest one third of all waves, visually estimated by an experienced observer. Some waves may be twice as high as the significant wave height. These conditions can occur in open water on lakes, estuaries, and in coastal waters in moderate weather.

2.3.4 Safety labels on board

It is important that you read and understand all these safety labels. Ensure that your crew also understand them.

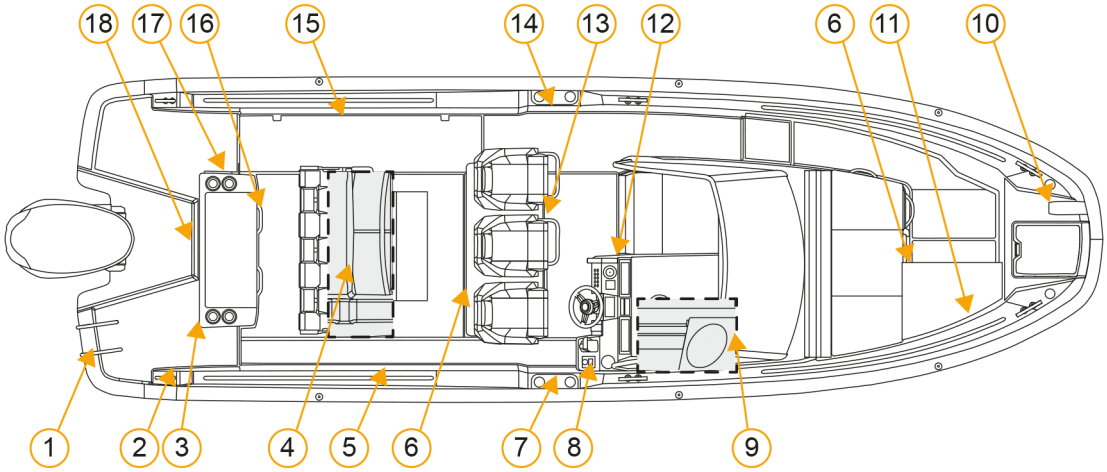
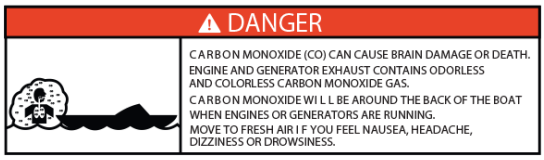
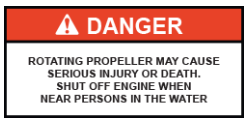
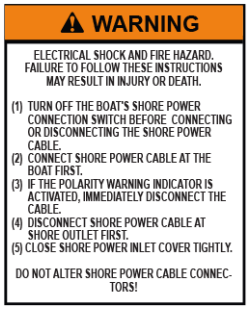
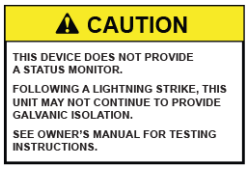
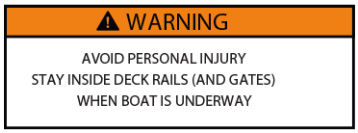
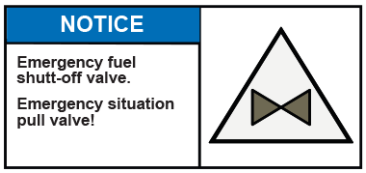
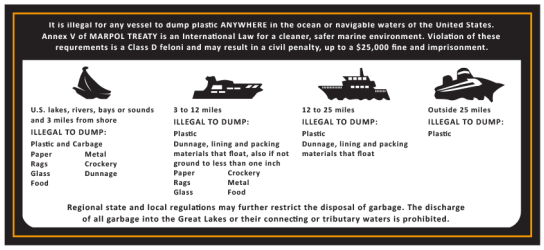
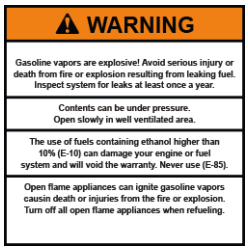
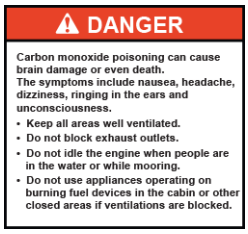
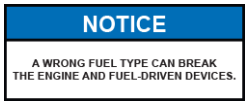
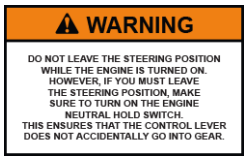
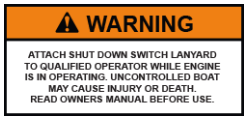
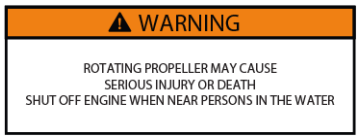
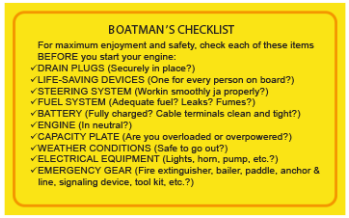
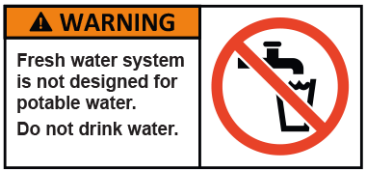


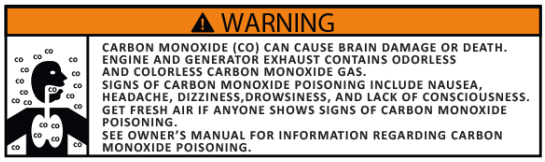
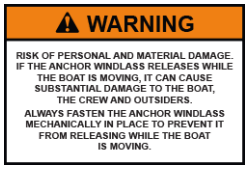
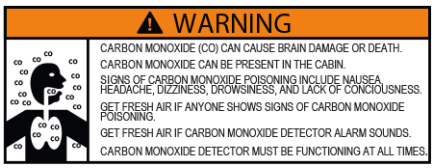
Figure 2.2 Safety label locations

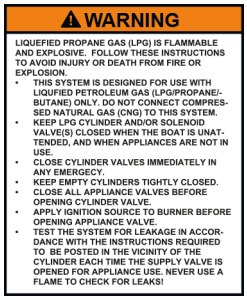
Location	Label	Clarification
1		**WARNING** Carbon monoxide (CO) can cause brain damage or death. Engine and generator exhaust contains odorless and colorless carbon monoxide gas. Carbon monoxide will be around the back of the boat when engines or generators are running. Move to fresh air if you feel nausea, headache, dizziness or drowsiness.
1		**DANGER** A rotating propeller may cause serious injury or death. Shut off the engine when there are people in the water near the boat.
2		**WARNING** A rotating propeller may cause serious injury or death. Do not approach or use the ladder when the engine is running.
3		**WARNING** Electrical shock and fire hazard. Failure to follow these instructions may result in injury or death. **1.** Turn off the boat's shore power connection switch before connecting or disconnecting the shore power cable. **2.** Connect the shore power cable to the boat first. **3.** If the polarity warning indicator is activated, immediately disconnect the cable. **4.** Disconnect the shore power cable from the shore outlet first. **5.** Close the shore power inlet cover tightly. Do not alter the shore power cable connectors!
3		**WARNING** Keep the hatch of the shore power plug closed when it is not in use.
4		**CAUTION** (This label is for the shore power charger, which is used for charging the boat's batteries using shore power.) This device does not provide a status monitor. Following a lightning strike, this unit may not continue to provide galvanic isolation and thus would not provide protection from electric current. See the owner's manual for testing instructions.

Location	Label	Clarification
5		**WARNING** Avoid personal injury. Stay inside the deck rails (and gates) when the boat is under way.
5, 6 & 15		**WARNING** Always keep the hatch tightly closed when the boat is in water.
7		**NOTICE** Emergency fuel shut-off valve. Emergency situation pull valve!
7		**WARNING** Avoid injury or death caused by fire or explosion resulting from leaking fuel. Inspect the system for leaks at least once a year.
7		Description of prohibitions concerning disposal of waste in US waters.
7		**WARNING** Gasoline vapors are explosive! Avoid serious injury or death from fire or explosion resulting from leaking fuel. Inspect the system for leaks at least once a year. The content can be under pressure. Open slowly in well ventilated area. The use of fuels containing ethanol higher than 10% (E-10) can damage your engine or fuel system and will void the warranty. Never use fuels with 85% ethanol content (E-85). Open flame appliances can ignite gasoline vapors, causing death or injuries from fire or explosion. Turn off all open flame appliances when refueling.

Location	Label	Clarification
7		**DANGER** Carbon monoxide poisoning can cause brain damage or even death. The symptoms include nausea, headache, dizziness, ringing in the ears and unconsciousness. • Keep all areas well ventilated. • Do not block the exhaust outlets. • Do not idle the engine when people are in the water or when mooring. • Do not use appliances operating on burning fuel devices in the cabin or other closed areas if ventilations are blocked.
7		**NOTICE** A wrong type of fuel can damage the engine and other fuel-driven devices.
7 & 17		**WARNING** Gasoline vapours are explosive. Open flame appliances can ignite gasoline vapors. To avoid injury or death from explosion or fire, turn off all open flame appliances when fueling the boat.
8		**WARNING** Do not leave the steering position when the engine is turned on. However, if you must leave the steering position, turn on the engine neutral hold switch. This ensures that the control lever does not accidentally go into gear.
8		**WARNING** Attach the shut down switch lanyard to a qualified operator while the engine is running. An uncontrolled boat may cause injury or death. Read the owner's manual before use.
8		**WARNING** Never exceed the maximum recommended number of persons when loading the boat. Make sure that the total weight of persons and equipment never exceeds the maximum recommended load, regardless of the number of persons on board.

Location	Label	Clarification
8		**WARNING** No ventilation is provided. Fuel vapors are a fire and explosion hazard. To avoid injury or death, do not store fuels of flammable liquids here.
8		**WARNING** Qualified operator to be in control at all times. Operation by an unqualified operator can cause loss of control. This may result in severe injury, death or property damage. Boat stability and handling will change with weight distribution. Read the owner's manual before use.
8		**WARNING** A rotating propeller may cause serious injury or death. Shut off the engine when there are people in the water near the boat.
8		**BOATMAN'S CHECKLIST** For maximum safety and enjoyment, check each of these items BEFORE you start your engine: • DRAIN PLUGS (Securely in place?) • LIFE-SAVING DEVICES (One for every person on board?) • STEERING SYSTEM (Working smoothly and properly?) • FUEL SYSTEM (Adequate fuel? Leaks? Fumes?) • BATTERY (Fully charged? Cable terminals clean and tight?) • ENGINE (In neutral?) • CAPACITY PLATE (Are you overloaded or overpowered?) • WEATHER CONDITIONS (Safe to go out?) • ELECTRICAL EQUIPMENT (Lights, horn, pump, etc.?) • EMERGENCY GEAR (Fire extinguisher, bailer, paddle, anchor & line, signaling device, tool kit, etc.?)
9, 16		**WARNING** The boat's fresh water system is not designed for potable water. Do not drink water from the boat's fresh water system.

Location	Label	Clarification
9		**WARNING** Carbon monoxide (CO) can cause brain damage or death. Engine and generator exhaust contains odorless and colorless carbon monoxide gas. Signs of carbon monoxide poisoning include nausea, headache, dizziness, drowsiness, and lack of consciousness. Get fresh air if anyone shows signs of carbon monoxide poisoning. See the owner's manual for information regarding carbon monoxide poisoning.
10		**WARNING** Risk of personal and material damage. If the anchor windlass is released while the boat is moving, it can cause substantial damage to the boat, crew and outsiders. Always fasten the anchor windlass mechanically in place to prevent it from being released while the boat is moving.
11		**CAUTION** Remove the deck cushions and the table from the foredeck when in speeds exceeding 15 knots.
12		**WARNING** Carbon monoxide (CO) can cause brain damage or death. Carbon monoxide can be present in the cabin. Signs of carbon monoxide poisoning include nausea, headache, dizziness, drowsiness, and lack of consciousness. Get fresh air if anyone shows signs of carbon monoxide poisoning. Get fresh air if carbon monoxide detector alarm sounds. The carbon monoxide detector must be functioning at all times.
12		**WARNING** Door must be kept shut when under way.
13		**WARNING** Avoid serious injury or death. Unexpected seat rotation may cause the ejection of occupant. Lock the swivel when speed exceeds 4.3 kn (8 km/h or 5 mph).
13		**WARNING** Risk of serious injury or death. Make sure the handle is in the locked position when the boat is moving.

Location	Label	Clarification
14		**CAUTION** The roof is not designed to carry a person's weight. Never go onto the roof or hang from it.
14		**WARNING** Never use the roof structure for anchoring, mooring or towing. The boat can capsize.
16		Open-flame cooking appliances consume oxygen and produce carbon monoxide. To avoid asphyxiation or injury or death from exposure to carbon monoxide, maintain open ventilation when using these appliances. Do not use this appliance for comfort heating.
17		**WARNING** Liquified propane gas (LPG) is flammable and explosive. Follow these instructions to avoid injury or death from fire or explosion. • This system is designed for use with liquified petroleum gas (LPG/propane/butane) only. Do not connect compressed natural gas (CNG) to this system. • Keep LPG cylinder and/or solenoid valve(s) closed when the boat is unattended, and when applicances are not in use. • Close cylinder valves immediately in any emergency. • Keep empty cylinders tightly closed. • Close all applicance valves before opening the cylinder valve. • Test the system for leakage in accordance with the instructions, which are required to be posted in the vicinity of the cylinder, each time the supply valve is opened for applicance use. Never use a flame to check for leaks!
18		**WARNING** Use caution when a skier is in tow, as the tow rope may backlash into the cockpit when released.

2.4 Fire safety

2.4.1 Preventing fire

⚠ WARNING

The engine, heater, gas cooker and other fuel-driven devices are the most common potential fire hazards.

- Never make changes to your boat's electrical or fuel system, or allow an unqualified person to make changes to any system on the boat.
- Never fill the fuel tank or handle fuel when the engine is running.
- Never smoke or use a naked flame when handling fuel.
- Never keep fuel in canisters or containers under the deck.
- Never leave the boat unattended when a gas cooker or heater is in use.
- Do not allow curtains or other flammable materials to get in contact with the heater, gas cooker, hot engine parts or naked flames.
- Ensure that all ventilation ducts are free.
- Always keep the bilge clean and check it regularly for fuel fumes and oil leakages. A smell of fuel is a potential sign of leaking fuel.

2.4.2 Fire extinguisher

The boat has a designated location where you can install a hand-held fire extinguisher. The fire extinguisher in the boat must be rated more than 5A/34B. For the location, see the diagram in section *2.3.1 Safety equipment and emergency exit on page 10*.

⚠ WARNING

Safety hazard.

Fire extinguishers are not factory-installed.

Ensure that the boat is equipped with fire extinguishers before using it.

The local rules and regulations for the fire extinguishing equipment may vary.

Make sure that the amount of fire extinguishers, and the placement is accoring to local regulations before using the boat.

The driver is responsible for ensuring that:

- All crew members are aware of the location and operation of the fire extinguishing equipment.
- The fire extinguishing equipment is easily accessible also when the boat is loaded.

The owner of the boat is responsible for:

- Ensuring that the fire extinguishing equipment is up-to-date.
- Replacing it when needed.

You must have the hand-held fire extinguishers inspected regularly at specified intervals, depending on the legislation in your country.

Contact the local fire authorities for the inspection policy in your area. If you are unsure of the inspection policy in your country, have your hand-held fire extinguishers inspected once a year.

2.4.3 In case of fire

⚠ WARNING

A fire on board can easily lead to an explosion. Act quickly!

- Turn off all the power sources:
  - Turn off the engine and all the main switches.
  - If the boat is connected to shore-side electricity, disconnect the cable.
- Make sure everyone on board is wearing a personal flotation device.
- Use the fire extinguisher or a fire blanket to put out the fire.
- **If the fire starts to get out of control, evacuate the boat to save lives.**
- If needed, call for help using a distress signal device.

⚠ WARNING

Do not use water! If the fire gets in touch with the engine fuel or the flammable gas in the gas cooker, water can spread the fire and cause an explosion.

2.5 Moving on board

2.5.1 Designated seating and moving areas

To prevent passengers from falling overboard, it is important to make sure everyone on board respects the areas indicated in the following diagram:

- Areas indicated with dark green circles are seats designated for passengers while underway.
- Areas where you can go when leaving the harbour and docking are highlighted in light green.
- Grip handles which you can use when seated or when moving around on the boat are pointed at with callout numbers.

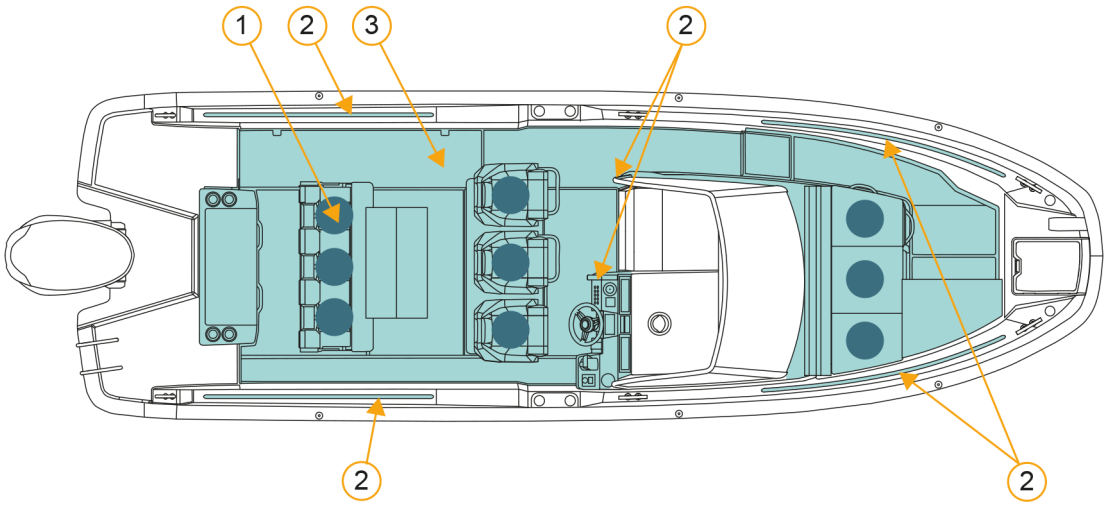


Figure 2.3 Designated seating and moving areas

1. Designated seating area
2. Grip handles
3. Moving area (marked in light green)

While underway, remember to ensure that everyone obeys the following rules:

- Always be seated in the designated seating areas.
- Avoid going onto the swimming platform and foredeck. Never stay on the foredeck at speeds exceeding 30 kn.
- Always wear a personal flotation device.
- Always use the grip handles for support when seated or when moving around on the boat.

⚠ WARNING

Never exceed the maximum recommended number of persons when loading the boat.

Make sure that the total weight of persons and equipment never exceeds the maximum recommended load, regardless of the number of persons on board.

⚠ CAUTION

Risk of losing balance, falling, or falling overboard.

Only use the designated grip handles for support when seated or when moving around on the boat.

Do not use any other metal tubes or railings for gripping. They are not designed to sustain the strain from a person's weight.

⚠ CAUTION

The roof is not designed to carry a person's weight.

Never climb onto the roof or hang from it.

2.5.2 Person overboard recovery

If a person has fallen into the water:

- Point the boat directly into the wind.
- Stop the engine.
- Hand the person a flotation device if they are not wearing one.
- Help the person back on board.
    - Use the swim ladder at the stern to reboard the person safely.
    - The ladder can also be pulled down from the water.

⚠ DANGER

A revolving propeller is life-threatening to a swimmer or a person who has fallen overboard.

Turn off the engine when someone is climbing on board.

2.6 Carbon monoxide

Engine exhausts contain carbon monoxide, which is a colorless and odorless gas. It is harmful to your health in high concentrations, and even in low concentrations if inhaled for a prolonged time.

⚠ WARNING

Carbon monoxide poisoning can cause brain damage or even death.

The symptoms include nausea, headache, dizziness, ringing in the ears and loss of consciousness.

- Keep all areas well ventilated.
- Do not block exhaust outlets.
- Do not idle the engine when people are in the water or while mooring.
- If the boat is equipped with a CO alarm, exit all closed spaces immediately when it sounds.

2.6.1 Preventing carbon monoxide accumulation

⚠ WARNING

There is always a risk of carbon monoxide accumulation when the engine is running, the boat is moving slowly or at a standstill, or when using burning fuel-based devices.

To minimize the danger:

- Do not rev the engine or idle it longer than necessary.
- Avoid using a canopy or side curtains. If you do use them, always ensure sufficient ventilation.
- If you have a convertible top, operate with the forehatch open and leave the cabin door open.
- Do not use fuel-driven appliances in the cabin or other closed areas when anchored, moored or docked. Only use them in areas where fresh air can circulate.
- Leave enough space between the engine and any obstacle.
- Inspect the exhaust system regularly.

Situations with a risk of high carbon monoxide accumulation

Beware of the following situations as they can cause increased concentrations of carbon monoxide. Exhausts can get trapped and blow towards boat occupants when:

Figure 2.4 Operating at a standstill

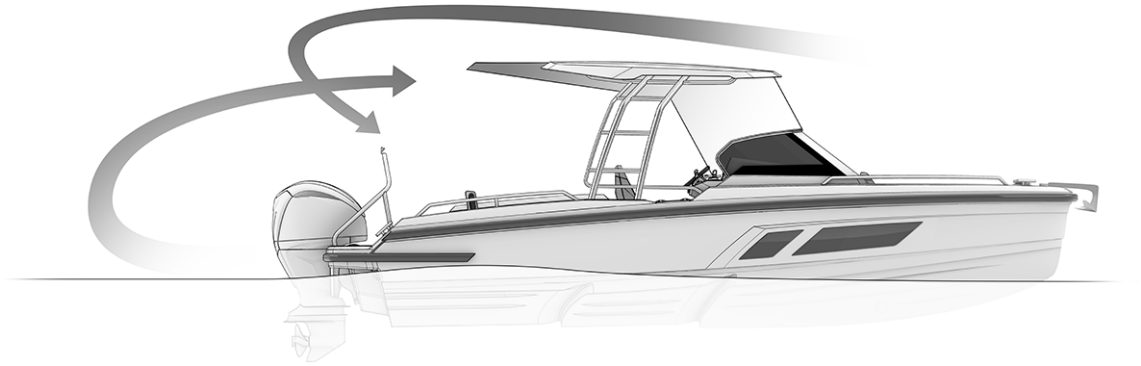


Figure 2.5 Operating at slow speeds or in a tailwind

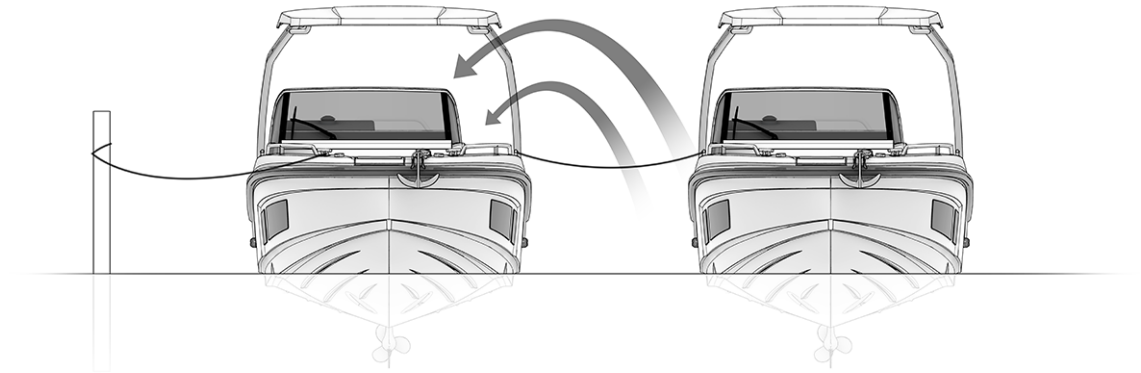


Figure 2.6 Running the engine in confined spaces

Figure 2.7 Operating with the bow high

2.6.2 In case of carbon monoxide poisoning

⚠ WARNING

Carbon monoxide poisoning can cause brain damage or even death.

The symptoms include nausea, headache, dizziness, ringing in the ears and loss of consciousness.

- Keep all areas well ventilated.
- Do not block exhaust outlets.
- Do not idle the engine when people are in the water or while mooring.
- If the boat is equipped with a CO alarm, exit all closed spaces immediately when it sounds.

If you suspect carbon monoxide poisoning:

- Have the victim breathe fresh air deeply.
- If breathing stops, resuscitate.
- A victim often revives, then relapses because organs are damaged by lack of oxygen. **Seek immediate medical attention.**

2.7 Grounding

In the case of grounding:

- Ensure that everyone on board wears a PFD.
- Everyone on board must come up on the deck.
- Stop the engine and trim it up so that it is lifted out of the water. Switch off all the main electrical switches.
- Check the condition of the propeller and the lower part of the engine.
- Inspect the boat for leaks. Inspect the keel from bow to stern.
- You may try to empty the boat using a bilge pump, but they are not designed for leaks.
- Make an emergency call or use a distress signaling device.
- If the leak is small, the engine is functioning and the boat is not grounded, drive to the nearest shore to prevent the boat from sinking.
- If the boat is equipped with a life raft, prepare it for use and use it if needed.
- In case of a leak, keep doors and hatches closed, if possible. Open doors and hatches may cause the boat to drown more quickly.
- It is not recommended to go inside of the boat if it has a leak.

⚠ WARNING

Risk of entrapment and drowning! A big leak may cause the boat to lose stability and sink in a matter of seconds. Do not go or stay inside the boat.

3 Boat layout and features

3.1 Layout diagrams

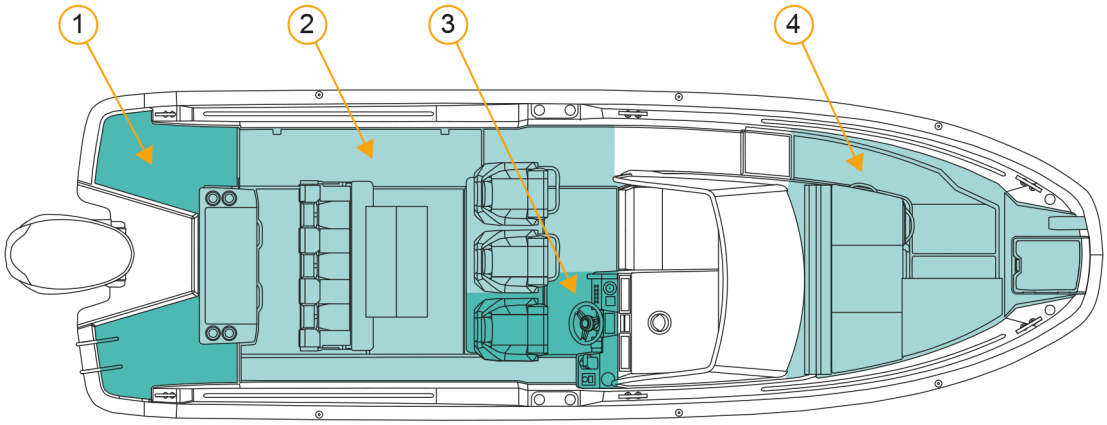


Figure 3.1 Above deck areas

1. Swimming platform
2. Aftdeck
3. Steering position
4. Foredeck

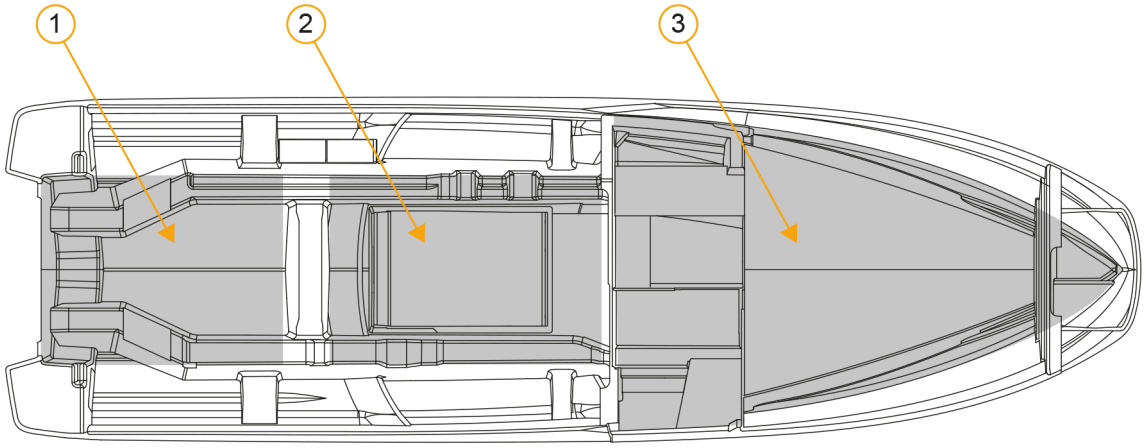


Figure 3.2 Below deck areas

1. Technical space
2. Tank space
3. Forecabin

3.2 Main features

Your boat is equipped with a wide range of features. Standard features include, for example:

- Powerful, industry-leading Yamaha F300 V6 outboard engine and electronic control system
- Innovative Nordic design and modular construction
    - Two-stepped fiberglass hull construction providing a more comfortable ride and better fuel economy
    - Modular design allowing flexible furnishings
    - Compact width suitable for trailering as regular transport in many areas
    - Large swimming platforms with easy access
    - Large social areas back and front
    - Wet bar
    - Forecabin with beds for two persons
    - Ergonomic steering position
    - T-Top roof
- Classifications and certifications
    - Design category C
    - Capacity for nine (9) persons.

The systems and their standard and optional features are described in more detail in section *4 Operating your boat on page 29* in this manual.

A large selection of accessories is also available. For an up-to-date list, visit www.quarken.com or enquire from your dealer.

4 Operating your boat

4.1 Fuel system

Your boat is equipped with a fixed fuel system for a gasoline engine. A fixed diesel system is available as an option to power a heater. In some models in the US, an LPG system is included for the optional gas cooker feature.

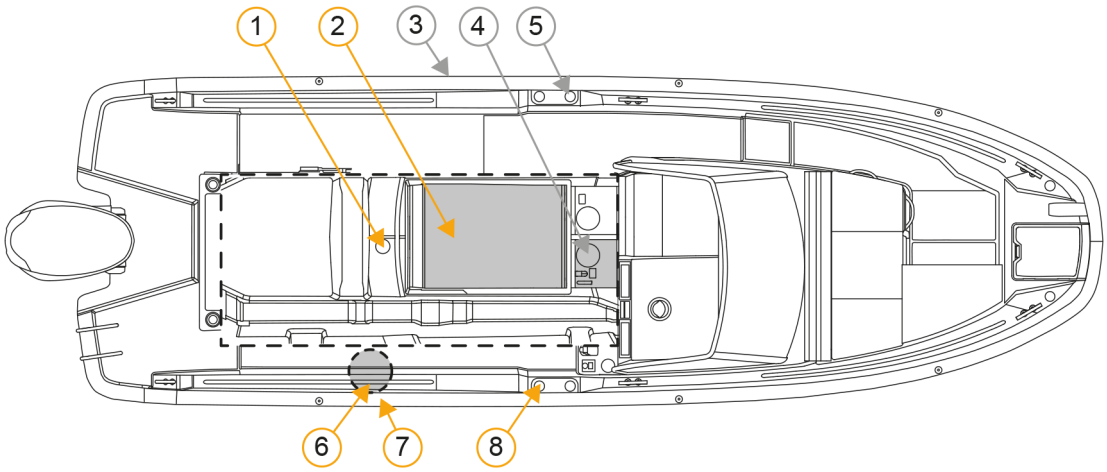


Figure 4.1 Fuel system

1. Gasoline fuel filter (and fuel demand valve**)
2. Gasoline fuel tank
3. Diesel tank ventilation opening*
4. Diesel tank*
5. Diesel fuel filling inlet*
6. Carbon canister**
7. Gasoline tank ventilation opening
8. Gasoline fuel filling inlet

* Optional feature

** US market only

⚠ WARNING

The exhaust gases of fuel-powered devices are extremely dangerous if exposure is prolonged. Over-exposure to carbon monoxide can be lethal.

- Never leave the boat unattended when appliances are on, and regularly check that they function as they should.
- Make sure that the cabin is sufficiently well ventilated. Keep ventilation ducts open.
- Beware of engine exhausts. See *2.6 Carbon monoxide on page 23* for details.

Gasoline fuel system

The engine runs on gasoline. The fuel filling inlet is labeled "Fuel". The fuel level in the tank can be monitored from the engine multi-function panel on the steering console (see section *4.3.1 Yamaha engine controls on page 39).*

The gasoline fuel system is described in detail in the engine manufacturer's manual. Check the manual especially for:

- Recommended fuel types
- More detailed refueling instructions
- Instructions for use and care.

EPA compliant fuel system

The boats for the United States market are compliant with the US Environmental Protection Agency (EPA) regulations.

The boats are equipped with a carbon canister. The system captures gasoline fumes and prevents fuel overflow when refueling.

In addition, there is a fuel valve controlling the fuel supply to the engine. The fuel valve is located by the gasoline fuel filter.

Diesel fuel system

The optional diesel fuel system is used to power the optional diesel-powered heater and stove. The diesel fuel filling inlet is labeled "Diesel". The fuel level in the tank can be monitored from the engine multi-function panel on the steering console (see *4.3.1 Yamaha engine controls on page 39*).

For instructions for use and care, see *4.11.1 Heater on page 61* and the manufacturer's manual.

LPG system

The Liquefied Petroleum Gas (LPG) system powers the gas cooker in the wet bar and in the cabin. This feature is available only for certain models.

For instructions for use and care, see section *4.11.3 Gas cooker on page 62*.

4.1.1 Refueling

⚠ WARNING

Gasoline and diesel are highly flammable and poisonous liquids. Take extra caution when handling them:

- Shut off the engine and all other fuel-based appliances. Extinguish cigarettes. Do not operate switches or other devices that may generate sparks while refuelling.
- Avoid spilling any fuel. In case of spill, wipe it up immediately. Clean spills on skin with soap and water.
- In case you swallow, inhale or get fuel into your eyes, seek medical attention.
- Ensure that no fuel has leaked into the bilge or the engine space.
- Always keep spare canisters on the deck. Storing them under the deck or in the cabin poses a risk of fire and environmental pollution.

Correct fuel type

When refilling the engine tank, use a high-quality gasoline that meets the minimum octane rating. For recommended fuel types, see the engine manual.

If you have selected the heater accessory, there is also a diesel tank. When filling the diesel tank, use diesel fuel.

NOTICE

The wrong fuel type can break the engine or other fuel-driven devices.

- Do not use diesel fuel when refueling the engine tank.
- Only use diesel when filling the diesel tank.
- Always check that you are using the correct fuel filling inlet.

For more information, read the equipment manufacturer's manual.

Filling inlets

The locations of the gasoline and diesel fuel filling inlets are included in the description of the fuel system.

⚠ CAUTION

The fresh water inlet and the septic waste suction fitting on your boat may be located next to a fuel filling inlet, if you have selected these optional features.

Do not mix up the different inlets.

Ensure that the caps labeled "Water" and "Waste" are tightly closed when refueling.

Fuel level

The fuel level in the tanks can be monitored on the Engine multi-function panel (see *4.3.1 Yamaha engine controls on page 39*).

Consider that you may not be able to fill up the tank if the boat is not level. The trim and how the boat is loaded affect the fuel tank capacity. In addition, always add an extra 20% reserve to the expected fuel consumption for the trip.

NOTICE

Environmental hazard!

Do not overfill the tank. Make sure the fuel does not overflow into the sea from the fuel ventilation opening.

Note that the ventilation system on the US market prevents fuel from flowing over.

4.1.2 Maintaining the fuel system

The fuel tank and filter are located in the technical space under the deck hatch. You need to access the technical space in order to:

- Check the filter once a month during the boating season.
- Empty any water accumulated in the filter.

You do not need to access the fuel tank in the technical space. For maintenance and in case of fault in the fuel system, turn to a professional workshop.

4.2 Electrical system

Your boat is equipped with a 12 V electrical direct current (DC) system. Shore power with a 110/230 V current is available as an option.

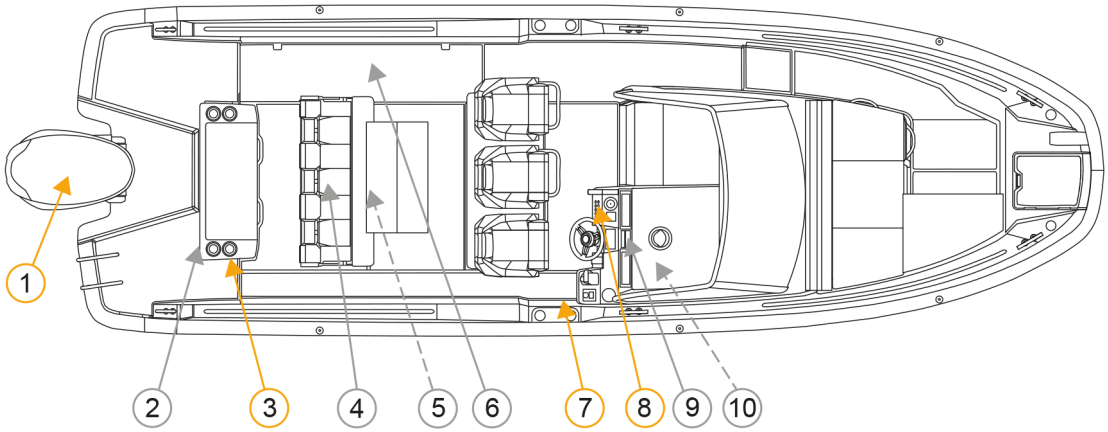


Figure 4.2 12 V electrical system and shore power

1. Engine charger
2. Shore power connection plugin unit*
3. Main switch panel
4. Heavy-duty fuses*
5. Shore power component (under deck hatch)*
6. 12 V system batteries
7. USB port
8. Function control panel
9. Charging platform phone*
10. 230 V socket outlet (inside cabin)*

*Optional

For details, see the boat's wiring diagrams available in the Owner's Bag.

⚠ WARNING Risk of electric shock.

- Never switch off the current when the engine is running. This may cause damage to the alternator.
- Never perform any work on the electrical circuits when they are connected. Never alter the electrical system or any related diagrams but turn to a professional specialized in marine electrical systems.
- Never modify the rated current amperage of over-current protective devices.
- Never reset or replace electrical appliances with components exceeding the rated current amperage of the circuit.
- Never leave the boat unattended with the electrical system energized, except for the automatic bilge pump, fire protection and alarm circuits.

4.2.1 Main switch panel and fuses (12 V system)

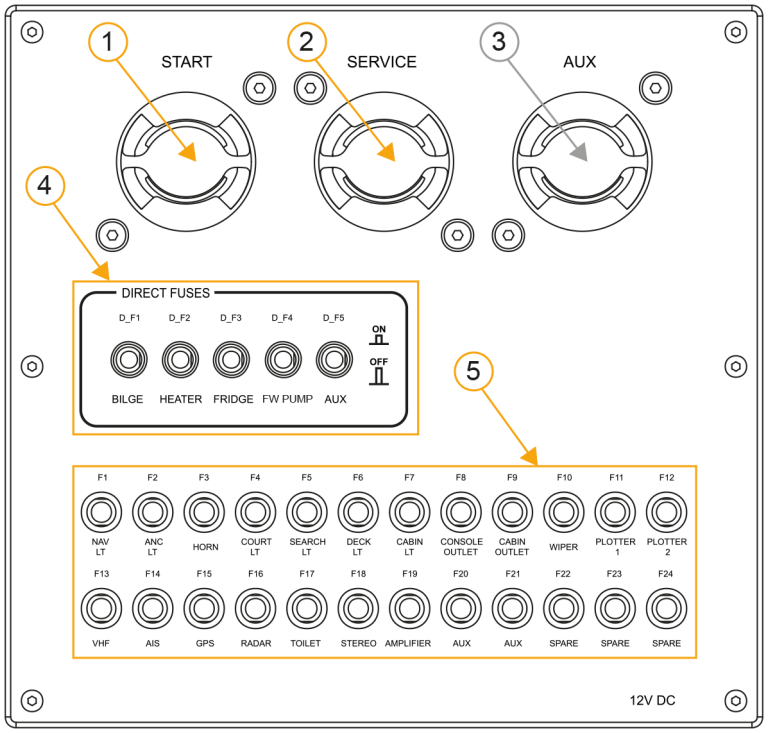


Figure 4.3 Main switch panel

1. Start: start main switch
2. Service: service main switch
3. Aux: auxiliary main switch*
4. Direct fuses: direct supply fuses/power switches
5. Regular fuses

* Optional

If you have selected optional accessories requiring a high level of power, the heavy-duty fuses for them are located close to the main switch panel. For the location of the main switch panel and fuses, see the diagram in section *4.2 Electrical system on page 32*.

Main switches

The 12 V equipment is controlled by the main switches on the main switch panel and the individual function buttons on the steering console.

- The start main switch controls the engine functions in the steering console.
- The auxiliary main switch controls the bow thruster and anchor windlass (optional accessories)
- The service main switch controls all other devices.

Direct supply fuses/switches

The Direct fuses buttons work both as fuses and power switches for devices that need current even when the main switches are turned off. The following appliances and devices are connected to them:

- Bilge pump
- Fridge, if applicable
- Heater*
- Audio channel memory*
- Aux for water tank or retrofits*

* Optional

When a direct supply fuse's power switch is pushed down, the switch is on. When pushed up, it is off.

NOTICE

Devices and appliances connected to direct supply fuses can become overheated and damaged if the direct supply switches are turned off too soon.

Always keep the direct supply switches turned on, even when switching power off from the device or appliance.

Regular fuses

The regular fuses are connected to the devices that are powered by the service main switch. Positions F20-F25 are spare fuses for retrofits.

Heavy-duty fuses

The heavy-duty fuses are connected to the optional accessories such as the bow thruster and anchor windlass. For the location and access to the heavy duty fuses, see diagram in section *4.2 Electrical system on page 32*.

4.2.1.1 Turning power on and off

When the power in the main switch is turned on, the background color is green. When it is turned off, the color is red with the text Off.

To turn on power supply to:

- The engine: turn on the start main switch.
- The boat's other equipment: turn on the service main switch.
- The bow thruster and anchor windlasses: turn on the auxiliary main switch (optional).

After the main switches are turned on, the individual functions can be operated from the steering console.

It is a good idea to always turn on all the switches prior to getting underway, and turn them off when leaving the boat for longer than one hour.

4.2.1.2 Replacing tripped fuses

⚠ WARNING

Damaged electronic circuits may cause an electric shock.

- Do not install components in the electrical system that exceed the electronic circuit's nominal amperage.
- Before connecting an electric circuit make sure that the circuit is not damaged and that there is no short circuit or a fire.
- Any damaged equipment must be serviced before it is put back into use.

Direct supply fuses/switches

If a fuse is tripped, the switch springs up to the off position. To switch it back on, press the button after the overload.

NOTICE

Do not turn the switch back on before you have found the reason for the interference.

Regular fuses

Regular fuses are trip switches that break the circuit and spring up when tripped.

To switch them back on, press the button after the overload.

⚠ CAUTION

Do not turn the switch back on before you have found the reason for the interference.

Heavy-duty fuses

Check the functioning of heavy-duty fuses from the holes in the fuse covers. If the metal strip inside is damaged, the fuse is tripped.

⚠ WARNING Changing tripped heavy-duty fuses yourself poses a risk of electric shock and serious injury.

- Do not change a tripped fuse yourself but contact a qualified electrician.
- Even opening the cover is not recommended. If it is necessary to open the cover, make sure that all the current cables from the batteries are disconnected.

4.2.1.3 Installing additional equipment

It is recommended that you do not alter the 12 V electrical system or any related diagrams yourself but always turn to a qualified electrician specialized in marine electrical systems.

When installing retrofits to the boat:

- Use the Aux circuits shown on the wiring diagram available in the Owner's Bag.
- Make sure the device power supply is connected to the fuse.
- Connect the device both to the power supply and the negative bar.

⚠ CAUTION

- Never modify the rated current amperage of the over-current protective devices.
- Never reset or replace electrical appliances with components exceeding the rated current amperage of the circuit.
- Always check that the circuit is not damaged. Make sure there is no short circuit or a fire caused by possible defects in the circuit before connecting an electrical circuit.
- Have damaged equipment serviced before putting it back in use.

The boat manufacturer disclaims any liability for retrofits or unauthorized modifications.

4.2.2 Batteries (12 V system)

Your boat has 2-3 batteries, depending on the equipment level of the boat:

- Start battery for the engine.
- Aux battery for the anchor windlass and bow thruster (optional).
- Service battery for the other equipment on the boat.

The batteries are located in the technical space. See diagram in section *4.2 Electrical system on page 32.*

4.2.2.1 Charging batteries

There is no need to manually charge the batteries. They are charged automatically either via the engine or shore power charger. The system includes an overload sensor.

⚠ CAUTION

- Make sure that the battery compartment is always well ventilated when charging batteries.
- If you cannot use the engine or shore power chargers, remove the batteries from the boat for charging with an external charger.

  Never use an external charger on the boat!

4.2.3 Shore power

Shore power is available as an option. It enables you to use electrical devices running on the standard mains current. Shore power also enables automatic charging of the boat's batteries. The boat is connected to an external 110 V (North America) or 230 V (Europe) power source on the shore or the jetty via a cable.

The shore power feature consists of:

- Shore power main unit with automatic fuses.
- Automatic charger.
- Plugin unit for connecting to the shore power source.
- Power outlet socket on the boat.

The locations of the shore power components are included in description of the electrical system.

Using shore power

⚠ DANGER

Risk of electric shock and fire.

- Do not touch the high-voltage system.
- Do not let the power cable hang in the water.
- Never modify the connections on the shore power cable.

To avoid the risk of electric shock and fire, connect the power in the following order:

1. Keep the shore power switched off before connecting and disconnecting the cable.
2. Connect the cable first to the boat and then to the shore power supply.
3. Disconnect the shore power cable first from the shore power supply and only then from the boat.
4. After use, close the plug cover to prevent it from getting wet.

Troubleshooting and maintenance

⚠ WARNING

Never modify or repair the connections in the 110 V/230 V system. Always turn to a qualified electrician.

- Have the shore power system checked at least once every two years.
- Always disconnect the shore power cable when the system is not in use.
- Metal casings of installed electrical equipment must always be grounded.
- Use grounded electrical equipment only.
- If the ground fault breaker is tripped, disconnect the shore power cable immediately.

  Contact a qualified electrician for repairs before using the system again.

4.3 Control system

The boat's engine and equipment are controlled from the steering console. The main console consists of:

- Various controls for engine, navigation and other equipment.
- Touchscreen displays for the engine and the chartplotter.
- Function control panel with function keys for lights and other features.

The configuration of the controls may vary depending on your selection of optional features.

4.3.1 Yamaha engine controls

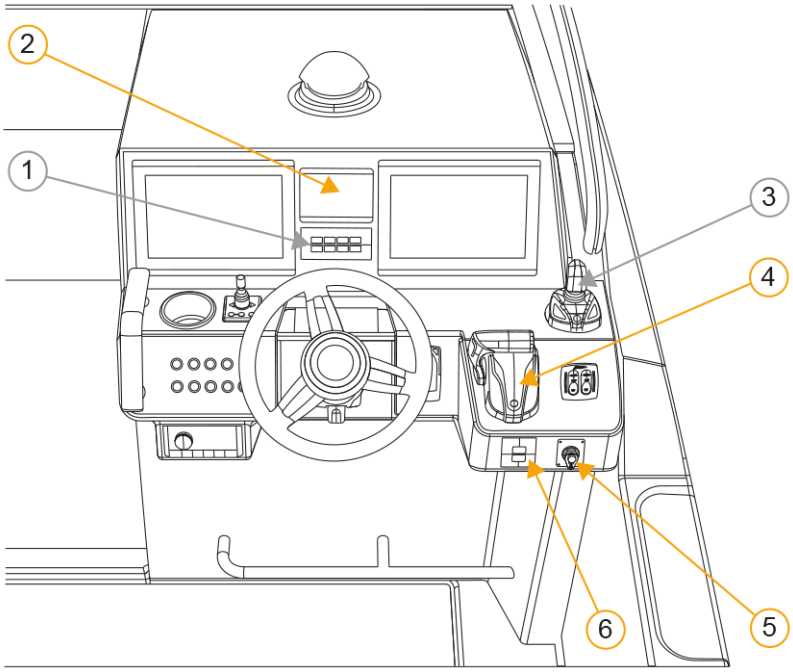


Figure 4.4 Yamaha engine control functions on the steering console

1. Autopilot control panel*
2. Engine multi-function panel
3. Helm Master® EX joystick*
4. Engine electronic control
5. Engine shut-off switch and cord
6. Engine power on/off panel

* Optional feature

You can find all the standard and optional engine control functions on the steering console. For example:

- The Yamaha engine electronic control combines the shift, the throttle and remote electrical operations.
- The engine multi-function panel shows information about fuel consumption, tank level and trim level, among others.
- The Yamaha Helm Master® EX technology is a fully integrated boat control system providing additional precision to steering.

For more details, see the engine manual and Yamaha Motor's Web pages. You can check the engine model from the label attached to the engine.

4.3.2 Equipment controls

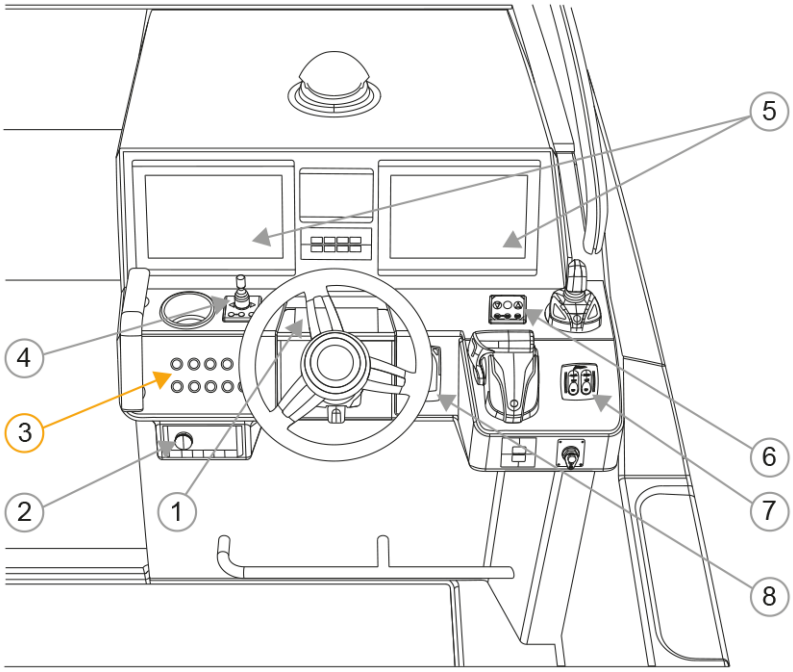


Figure 4.5 Controls on the steering console

1. Wireless charging platform for phone*
2. Audio system control unit*
3. Function control panel
4. Bow thruster control unit*
5. Chartplotter displays*
6. Anchor windlass control unit*
7. Trim tabs control unit*
8. Anchor windlass remote control*

* Optional

Most equipment controls are located on the steering console. The location of the controls may vary depending on the configuration of your boat.

4.3.3 Function control panel

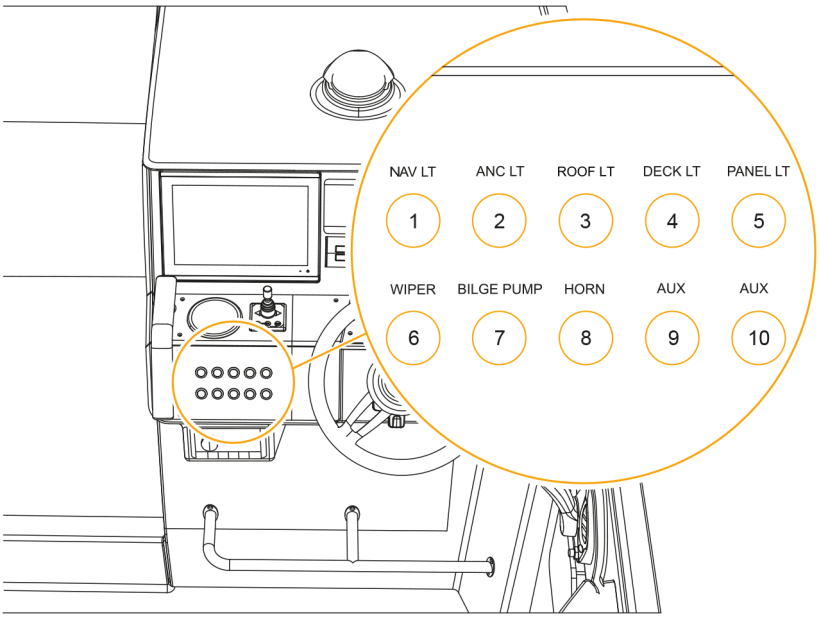


Figure 4.6 Controls on the function control panel

1. Navigation lights
2. Anchor light
3. Roof (ceiling) light*
4. Deck light*
5. Panel light
6. Windshield wiper*
7. Bilge pump
8. Horn*
9. Aux spare connection function key
10. Aux spare connection function key

*Optional

4.4 Engine

Your boat is equipped with a powerful industry-leading Yamaha outboard engine. Get familiar with the extensive engine manual provided in the Owner´s Bag.

The manual provides instructions for use, routine servicing and maintenance to ensure proper functioning of the engine.

The boat's engine start switch is located on the main switch panel. Other engine functions are available from the steering console. See section *4.3.1 Yamaha engine controls on page 39.*

⚠ WARNING For the maximum permitted engine power and weight, check the builder's plate.

Do not exceed the maximum permitted engine power.

4.4.1 Starting the engine

NOTICE The engine requires a break-in period before using it for the first time. Carefully follow the instructions in the engine manual.

To start the engine:

- Turn on the start switch on the main switch panel. When the power in the main switch is on, the background color is green.
- Follow the start-up checklist and operating instructions in the engine manual.

⚠ CAUTION If the boat has an engine shut-off switch, attach the shut-off cord to yourself before detaching the mooring lines.

⚠ WARNING Do not leave the steering position while the engine is turned on. However, if you must leave the steering position, make sure to turn on the engine neutral hold switch. This ensures that the control lever does not accidentally go into gear.

1. Move the control lever into neutral position.
2. Press the engine neutral hold switch and make sure the light turns on.
3. Detach the engine shut-off cord.

4.4.2 Engine shut-off switch

An engine shut-off switch is a safety feature for situations where the driver becomes incapacitated.

The engine shut-off switch turns off the engine in case you fall overboard or stumble on board. The switch is located on the steering console.

⚠ CAUTION

- Attach the shut-off cord to yourself immediately after detaching the mooring lines. It only works if you have hooked it to yourself.
- To prevent the engine from stopping unintentionally, remember to detach the cord before docking.

For more detailed instructions, see the engine manual.

4.4.3 Installing an engine

If installing a new engine, follow this installation specification.

⚠ WARNING

For the maximum permitted engine power and weight, check the builder's plate.

Do not exceed the maximum permitted engine power.

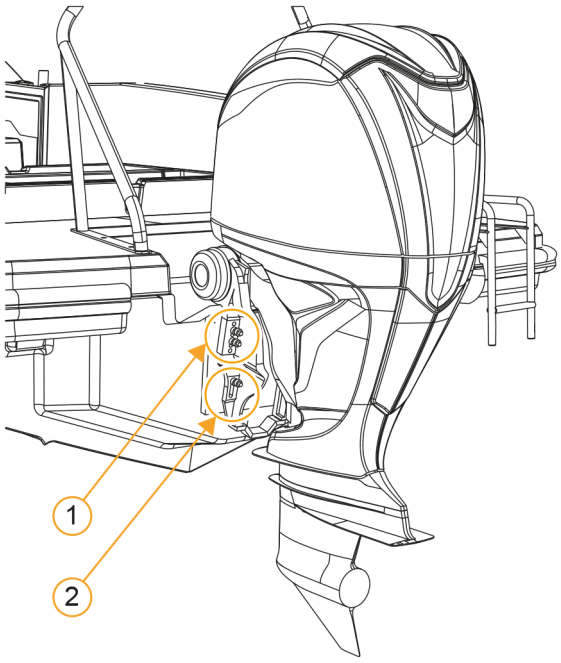


Figure 4.7 Engine installation

1. Upper fastening bolts
2. Lower fastening bolt

The upper fastening bolts must be installed to the second and fourth fixing holes, counting from top.

The lower fastening bolt must be installed as high as possible in the mounting bracket.

4.5 Navigation system

In addition to the mandatory navigation lights, you can equip your boat with additional navigation aids that further enhance your and your crew's safety.

The navigation equipment is controlled from the steering console. For the control locations, see sections *4.3.2 Equipment controls on page 40* and *4.3.3 Function control panel on page 41.*

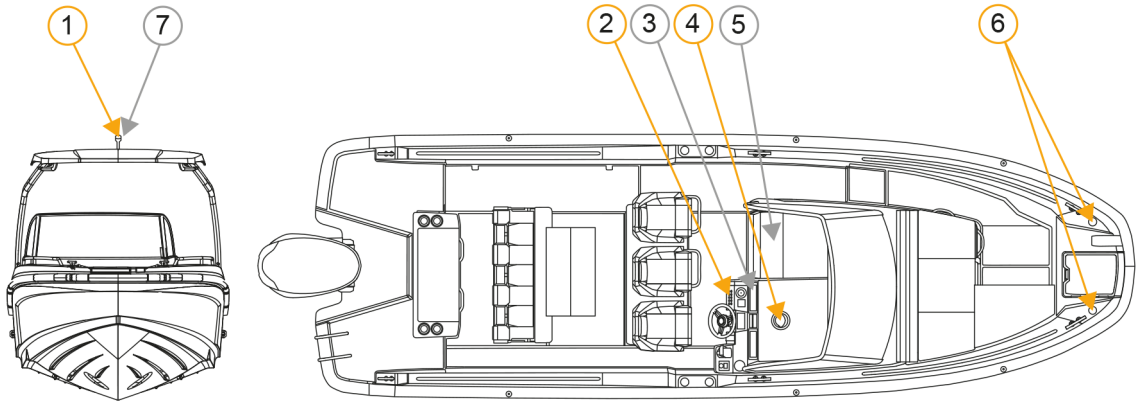


Figure 4.8 Navigation system components

1. Anchor light mast
2. Function control panel for navigation lights and anchor light
3. Chartplotter display for add-on software*
4. Compass
5. Sonar sensor*
6. Navigation light
7. Radar*

*Optional

It is recommended that you detach the radar during transportation. It is easy to undo from the screws.

4.5.1 Navigation lights

Your boat is equipped with front navigation lights and an anchor light. The panel light ensures the visibility of the function panel keys in the dark.

The light switches are located on the function control panel at the steering console.

You must always have the navigation lights and anchor light on when travelling in the dark.

Inspect the navigation lights regularly and replace broken lights as soon as possible.

- Do not add lights that could diminish the visibility of the standard navigation lights.
- Do not modify the navigation lights or use plug-in navigation lights.

Troubleshooting

If the navigation and anchor lights do not work:

1. Verify that the Service main switch is turned on.
2. Check the fuses on the main switch panel.
3. Change the bulb if broken.

The locations of the main switches and fuses are described together with the electrical system.

4.5.2 Chartplotter displays

Your boat can be equipped with software for add-on applications. These can be used via the boat's chartplotter displays.

Available optional add-on applications:

- Garmin chartplotter with GPS and a sonar system.
- Automatic identification system (AIS).
- Radar.
- Choice of one or two displays. If you have opted for both chartplotter displays, you can view two different applications simultaneously.
- Garmin manuals and this Owner's manual.

See the manufacturer's manual for instructions for use.

Maintenance

The fuses for the displays are the plotter regular fuses, which are located on the main switch panel.

4.5.3 GPS and sonar system

You can select a Garmin chartplotter with a GPS navigation and sonar system as an accessory. Note that the chartplotter does not include maps as standard.

⚠ CAUTION Always keep a compass and an up-to-date chart on board, even if you have a chartplotter. A GPS supports navigation, but it should not be used as primary means of navigation.

⚠ CAUTION At higher speeds, the sonar sensor may not display accurate measurements.

See the manufacturer's manual for instructions for use and care.

Maintenance

Have the sonar sensor liquid checked in connection with regular servicing. The sonar sensor is located inside the hull (see diagram in section *4.5 Navigation system on page 43)*.

4.5.4 Automatic identification system AIS

The automatic identification system (AIS) is an automatic tracking system designed to avoid collisions at sea. It discovers other vessels and makes your vessel visible to other seafarers in poor visibility and weather conditions.

The AIS is an optional module. The user interface is integrated into the chartplotter.

For instructions for use, see the manufacturers' manuals.

4.5.5 VHF marine radio

VHF marine radio is an international very high frequency (VHF) band communication channel for two-way voice communication between vessels.

VHF marine radio is available as an optional feature for your boat.

You can choose AIS as an additional module to the VHF radio. The AIS user interface is integrated into the chartplotter.

The VHF protocol is a worldwide system with local regulations for use. For example, in many countries, a VHF radio license is required.

For instructions for use, see the manufacturers' manuals.

4.5.6 Radar

Radars increase safety by helping you detect objects on the water, and avoid collisions in conditions with poor visibility.

A radar is available as an optional module integrated into your chartplotter.

4.5.7 Compass

A compass is available as a standard feature.

NOTICE

The compass readings are not exact as electronic devices always cause interference.

Have your compass calibrated once a year or be aware of the level of deviation specific to your compass.

4.6 Other control system features

In addition to the engine and navigation system controls, your boat's steering console provides extensive functionality for the other equipment on the boat.

For the control locations on the steering console, see sections *4.3.2 Equipment controls on page 40* and *4.3.3 Function control panel on page 41.*

4.6.1 Bow thruster

Your boat may have a bow thruster as either a standard or optional feature. The bow thruster makes the boat easier to maneuver by providing lateral thrust when docking.

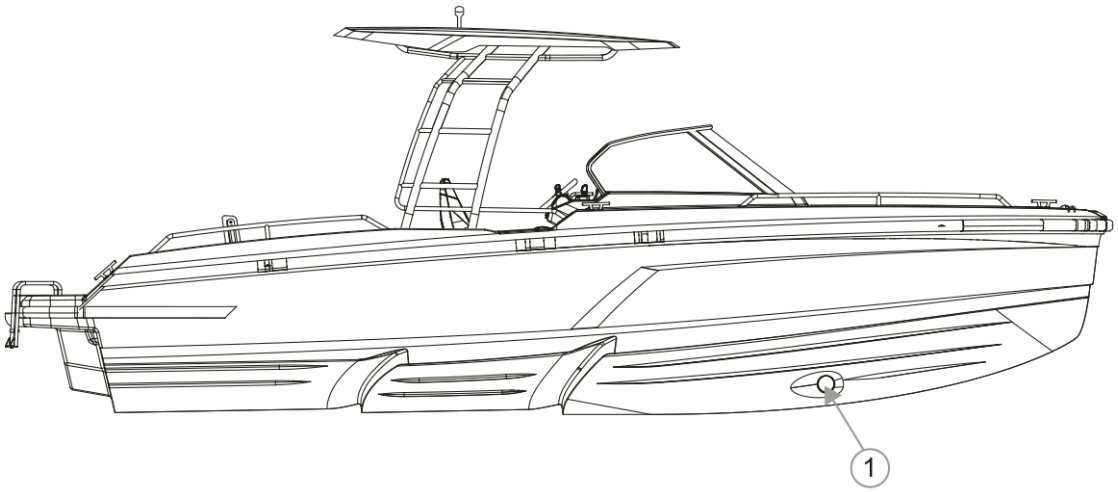


Figure 4.9 Bow thruster

1. Bow thruster

Using the bow thruster

To use the bow thruster:

- Turn the power on from the Aux dial on the main switch panel and then from the joystick on the steering console.
- For further instructions for use, see the manufacturer's manual.

⚠ WARNING

Incorrect use may cause the bow thruster to overheat and shortcircuit.

- Use the equipment only for short periods at a time.
- Do not exceed the maximum amount of use indicated in the manufacturer's manual.

⚠ WARNING

Do not touch the bow thruster if the Aux switch on the main switch panel is turned on.

Troubleshooting

The bow thruster unit is located under the front cabin beds. There is no need to access it in normal use. In case of a problem, always contact a professional boat service.

The device is connected to a heavy-duty fuse. In case of fuse overload, check the functioning of heavy-duty fuses from the holes in the fuse covers. If the metal strip inside is damaged, the fuse is tripped.

⚠ WARNING Changing tripped heavy-duty fuses yourself poses a risk of electric shock and serious injury.

- Do not change a tripped fuse yourself but contact a qualified nautical electrician.
- Even opening the cover is not recommended. If it is necessary to open the cover, make sure that all the current cables from the batteries are disconnected.

For more information, see the manufacturer's manual.

4.6.2 Trim control system

You can use the optional trim control system to adjusting the running angle of your boat. While the Yamaha engine power trim provides powerful vertical trimming capability, trim tabs provide additional control of the horizontal angle of the boat while under way.

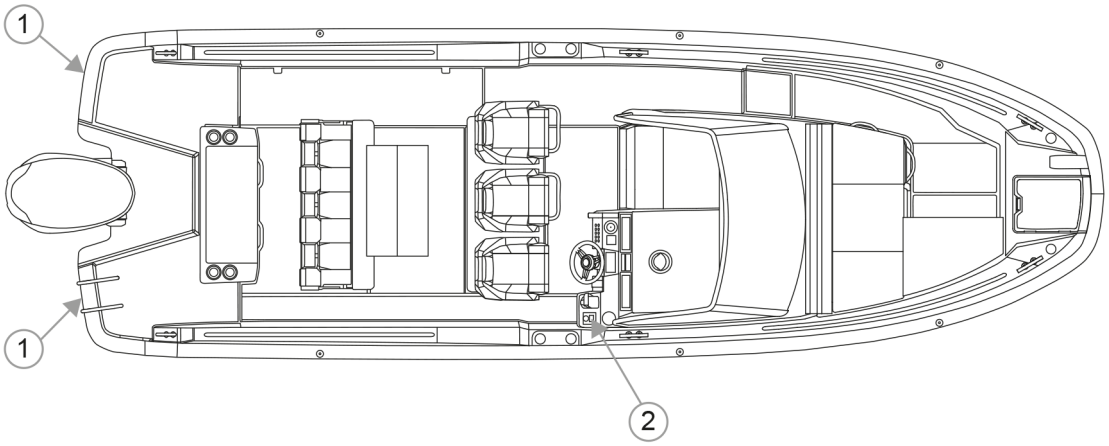


Figure 4.10 Trim tabs

1. Trim tabs
2. Control unit

Using trim tabs

Trim tabs provide additional heeling and horizontal tilting control. Situations where trim tabs are especially useful are:

- When you need to trim the bow down in a rising sea.
- When accelerating to cruising speed.
- When running with a strong beam wind.

The control options from the control unit are:

- Port up/down
- STB (starboard) up/down.

For more detailed instructions on how to use the trim tabs, read the manufacturer's manual. Read also the engine manufacturer's instructions on adjusting the vertical angle.

⚠ WARNING

Trim tabs can change the boat's behaviour radically if not used correctly.

- Adjust them carefully at high speeds.
- Do not drive with the bow too low as this may cause the boat to turn unexpectedly.

⚠ CAUTION

- The boat's two-stepped hull construction affects the boat's driving characteristics and the trim. Read more in section *6.3 Driving and navigating on page 70.*
- Trim tabs do not work at speeds below 10 kn.

4.6.3 Anchor windlass

Anchor windlasses are available as an optional accessory. They help you raise or drop the anchor quickly, easily, and reliably. You can opt for one or two windlasses. Anchors are included with the windlasses.

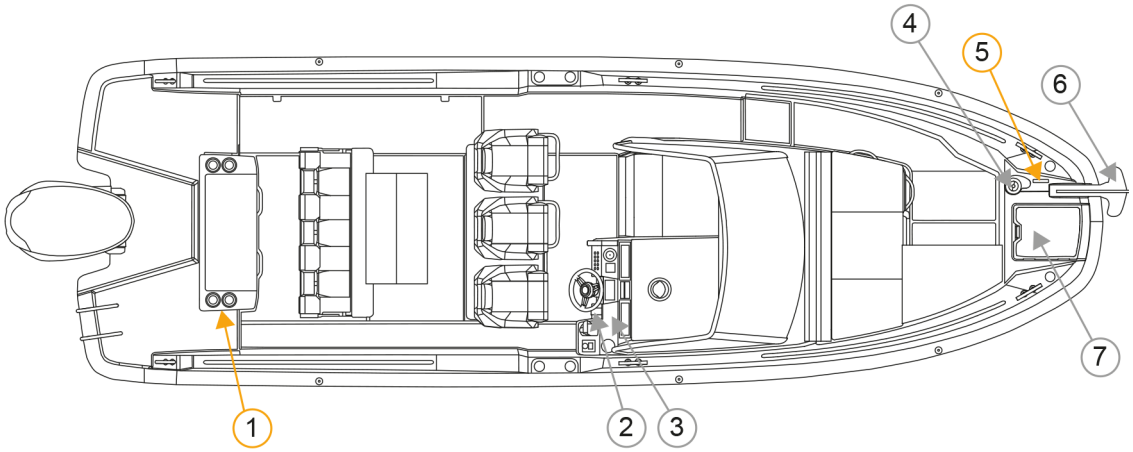


Figure 4.11 Anchor windlass

1. Main switch
2. Remote control*
3. Control unit*
4. Windlass*
5. Cleat
6. Anchor*
7. Anchor box hatch*

Using anchor windlasses

To turn on the device:

1. Turn power on from the Aux dial on the main switch panel.
2. Turn on power from the control unit.

To operate the windlass:

- You can operate the aft anchor windlass from the control unit on the steering console or with the remote control.
- The windlass in the bow only works with the remote control.
- For more detailed instructions for use, see the manufacturer's manual.

The chain or rope must be the correct type for the windlass. For the recommended anchor chain or rope type, see section *9.2 Technical specification on page 77.*

⚠ WARNING

If the anchor windlass releases while the boat is moving, it can cause substantial damage to the boat, crew and other people.

Always fasten the anchor windlass mechanically in place to prevent it from releasing while the boat is moving.

NOTICE

The anchor windlass has no automated stopping mechanism. The anchor must be able to move freely to avoid damaging the boat.

- Make sure the anchor is always in your line of sight when lifting it.
- Once the anchor is in place, make sure not to over-tighten the rope.

Troubleshooting

The device is connected to a heavy-duty fuse. In case of fuse overload, check the functioning of heavy-duty fuses from the holes in the fuse covers. If the metal strip inside is damaged, the fuse is tripped.

⚠ WARNING

Changing tripped heavy-duty fuses yourself poses a risk of electric shock and serious injury.

- Do not change a tripped fuse yourself but contact a qualified nautical electrician.
- Even opening the cover is not recommended. If it is necessary to open the cover, make sure that all the current cables from the batteries are disconnected.

For more information, see the manufacturer's manual.

4.6.4 Recreational lights and audio system

Recreational lights

Your boat can be equipped with a court light and a deck light.

The control buttons for these are located on the function control panel, if you have selected these features.

Audio system

A Hi-fi audio system is available as an option. The system control unit is located on the steering console. It can also be used from the chartplotter display, if you have selected this optional feature.

See the manufacturer's manual for instructions for use.

4.6.5 Windshield wiper, horn and device chargers

A windshield wiper, and horn are available as optional accessories. The control buttons for these are located on the function control panel, if you have selected these features.

The steering console has a wireless charging platform for phones with that feature.

In addition, there is a USB charging plug for phones and other devices.

4.7 Hull and superstructure openings

Your boat has a number of openings where water can get in or out. These require your attention during use in order to prevent water ingress and to ensure passenger safety.

The following diagrams indicate the location of these openings in the hull and superstructures (areas above the deck).

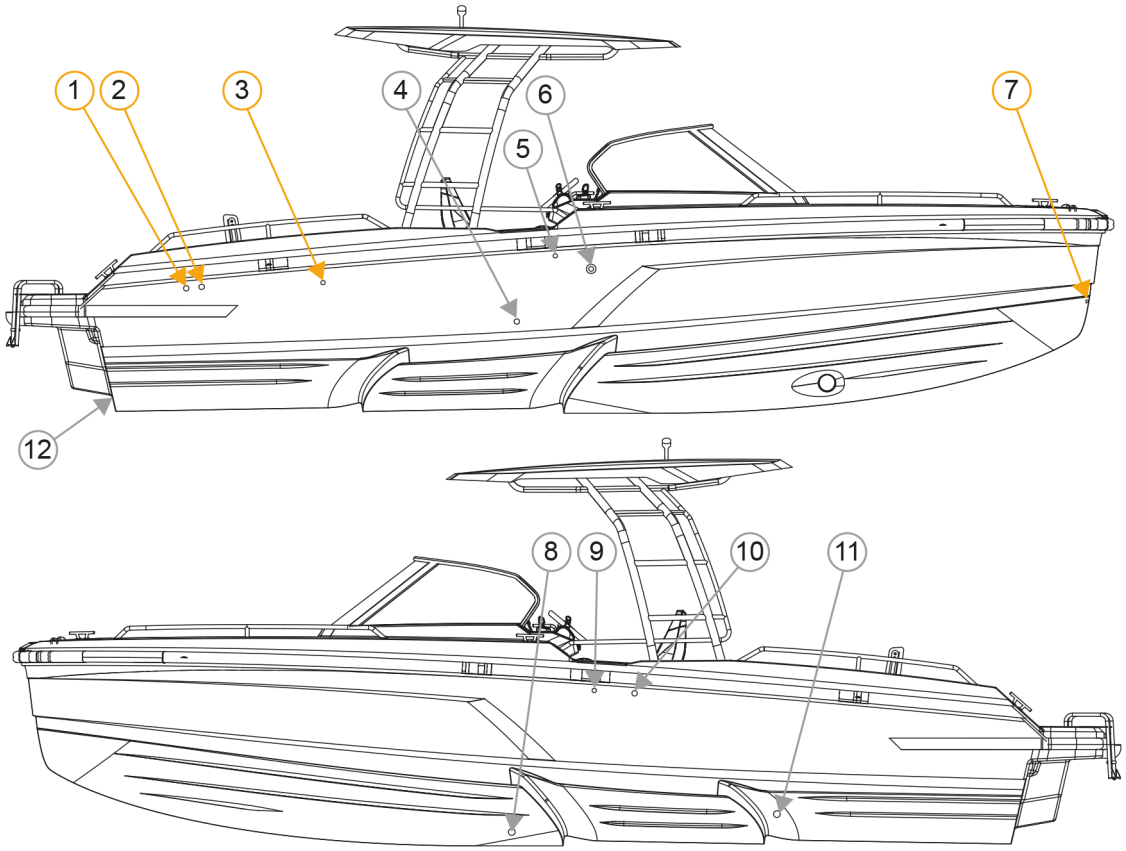


Figure 4.12 Hull openings

1. Manual bilge pump drain hole
2. Electric bilge pump drain hole
3. Gasoline tank ventilation opening
4. Toilet sink drain hole*
5. Fresh water tank ventilation opening*
6. Heater exhaust valve*
7. Anchor box drain hole
8. Toilet flush water inlet*
9. Diesel tank ventilation opening*
10. Septic tank ventilation opening*
11. Septic tank drain hole*
12. Bilge drain hole**

*Optional

** US market only

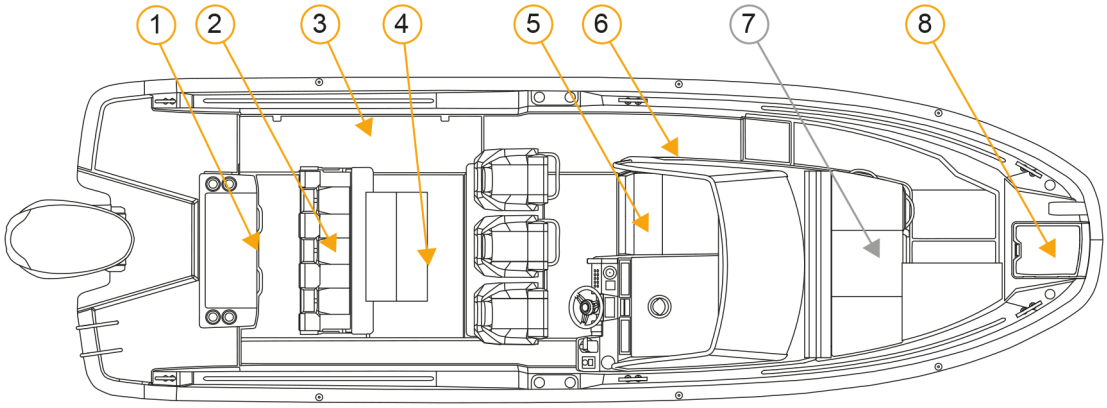


Figure 4.13 Windows, doors and hatches

1. Wet bar door
2. Fuse hatch (in the storage locker)
3. Battery hatch
4. Deck hatch
5. Cabin hatch
6. Cabin ventilation window
7. Forehatch*
8. Anchor storage hatch

*Optional

4.7.1 Preventing flooding

To minimize the amount of water getting into the boat:

- Always check that the hatches are tightly closed before and after using the boat. It is recommended that you keep them closed when under way.
- Keep windows, doors and hatches closed in rough waters and bad weather. You may keep them open in calm weather.
- Close canopies, hatches and other openings, if water is sprayed inside through them. This can sometimes occur in certain conditions due to negative pressure or at certain speeds.

⚠ WARNING

The boat can sink if enough water gets into the bilge through the hatches.

Always keep the bilge inspection hatch closed when the boat is in water.

⚠ CAUTION

Risk of personal and material damage.

The windows, doors, and deck hatches are not designed to sustain pressure from rough waters and bad weather. They can cause injuries if they break or are shut with force.

Always make sure they are tightly closed when underway. You may keep them open in calm weather.

4.7.2 Maintaining hull openings

- Check annually the functioning and leakage of the seacocks.
- Check through-hull fittings annually.
- Test the opening and closing function of the seacocks every month.
- Check leakages from inside the hull every time before the boat is setting off.

4.8 Draining system

Your boat's draining system consists a self-draining system, automatic bilge pump system and a manual bilge pump.

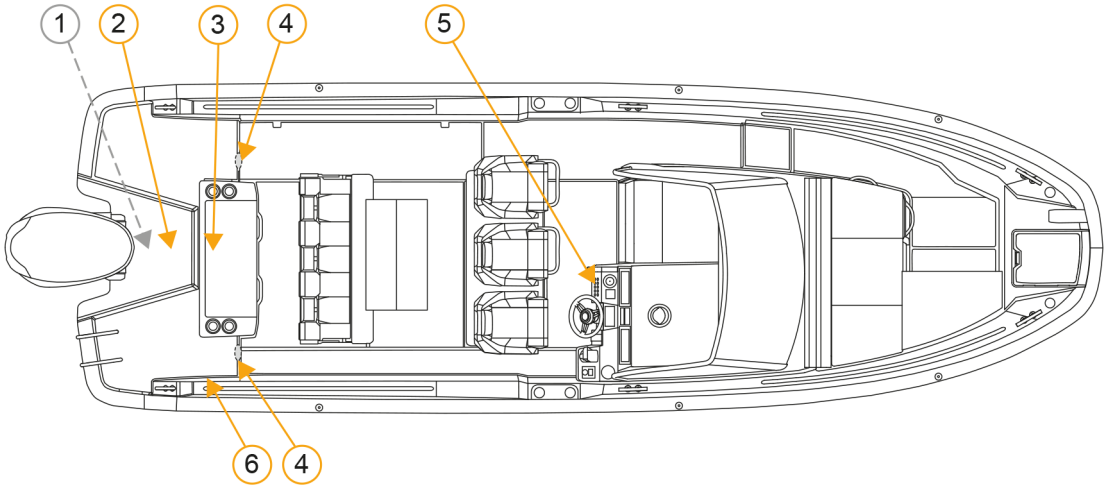


Figure 4.14 Draining system

1. Bilge drain hole (on the transom)*
2. Electric bilge pump and suction points for bilge pumps
3. Access to the bilge pump (inside wet bar)
4. Deck drain holes
5. Switch for electric bilge pump
6. Manual bilge pump with handle

*US market only

⚠ WARNING

Risk of flooding or sinking (US market only):

- The drain plug on the bilge drain hole must always be closed when the boat is in water.
- The plug can be opened when the boat is out of the water.

4.8.1 Self-draining system

Your boat is equipped with a self-draining system for the deck. The drain holes for water coming from rain, splashing or breaking waves are directly connected to the sea.

NOTICE

Risk of material damage.

Some of the water and condensation from the deck may end up in the bilge and cause damage to the components over a long period of time, if not removed.

See the description of the bilge pump system for more information.

⚠ CAUTION

The drain holes must be open at all times.

Do not block the drain holes.

Remove any accumulated debris regularly to prevent clogging.

⚠ WARNING

Risk of flooding or sinking (US market only):

- The drain plug on the bilge drain hole must always be closed when the boat is in water.
- The plug can be opened when the boat is out of the water.

The locations of the bilge drain holes are included in the description of the draining system.

4.8.2 Bilge pump system

The bilge pump system consists of an electric and a manual bilge pump.

The electric bilge pump is equipped with a float for detecting water in the bilge space. The pump is activated and pumps out the water as required. There is an alarm when the pumping starts. You can also control the pump from the steering console.

The manual bilge pump serves as additional safety equipment in case the electric bilge pump is broken or there is no electricity.

Using the pumps

⚠ WARNING

The combined capacity of the bilge pumps is not designed to pump out the boat in the event of hull damage. See section *9.2 Technical specification on page 77* for details about pump output capacity.

In case of rapid water accumulation, call rescue service.

NOTICE

Risk of material damage.

The boat's two-stepped hull structure allows water to build up over a long period of time and can cause damage to the components, if not removed.

- Check the bilge area always before using the boat.
- Do not leave the boat unattended in the water for more than two weeks at a time.
- Activate the electric pump from the steering console if necessary.

The pumps can break if run dry for a long time.

- Make sure you stop the pumps when the bilge is empty.

Maintenance

Normally there is no need to use the bilge pumps as the system is fully automatic. However, to ensure that there is no water build-up in the bilge, regularly check the aft storage space, fuel tank space and under the front cabin floor.

⚠ CAUTION

As as safety precaution:

- Check the functionality of the bilge pumps regularly.
- Remove any debris from the suction points.

You can access the electric bilge pump and the suction points from the inspection hatch in the aft storage space. See *4.8 Draining system on page 54*.

NOTICE

If you are leaving the boat docked for a long time without connecting it to shore power, the boat's bilge pump battery may run empty. As a result, water can build up in the bilge and cause damage to components.

Do not leave the boat unattended in the water for a long time. It is recommended that you check, approximately every two weeks, that:

- There is no water in the bilge.
- The bilge pump is working.
- The boat's floating position is level.

NOTICE

Environmental hazard! Contaminants may end up in the bilge and waterways.

- Check the bilge water regularly for contaminants, such as oil, diesel, and glycol.
- Do not pump water into the sea if it is not clear. Use a separate container and discard as contaminated waste.

4.9 Freshwater system

You can choose to equip your boat with a freshwater system as an optional extra. The freshwater system consists of a freshwater tank, automatic pump and water taps in the toilet and wet bar, if applicable.

⚠ CAUTION

Safety hazard.

Using the water as drinking water is not recommended.

In the US, using the water as drinking water is not allowed, as the tank is not classified for drinking water.

⚠ CAUTION

Safety and material damage hazard.

The fresh water filling inlet may be located next to the fuel filling inlets or the septic waste suction fitting, depending on the features you have selected.

Do not mix up the different inlets. Make sure the caps to the inlets which you are not using are tightly closed when re-filling the freshwater or fuel tanks.

NOTICE

Risk of material damage.

Empty the freshwater tank fully before storing the boat at freezing temperatures.

Using anti-freeze products is not recommended.

NOTICE

Risk of material damage.

Do not let the freshwater pump run dry. The pump must always have water in it when turned on.

Turn it off immediately when the tank is empty.

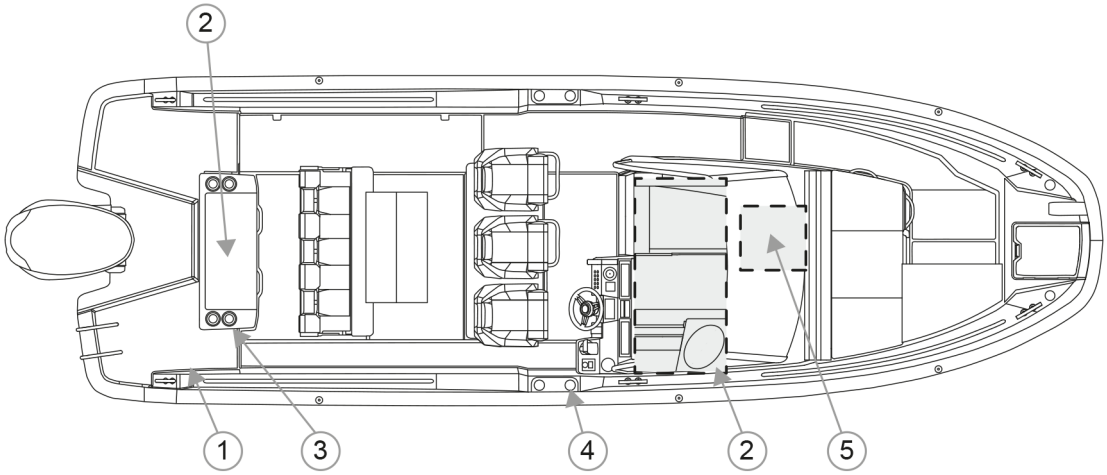


Figure 4.15 Freshwater system

1. Shower
2. Sink tap
3. Power switch/fuse for fresh water pump
4. Water filling inlet
5. Freshwater tank, pump and filter

Using the freshwater system

When filling the tank for the first time, If the freshwater pump fails to prime itself and start circulating water, contact your local retailer or boat service.

- Fill the tank from the water filling inlet fitting labeled "Water".
- Turn on the freshwater pump from the main switch panel. See section *4.2.1 Main switch panel and fuses (12 V system) on page 33*.
- Keep the pump turned on as long as there is water in the tank.
- When the tap runs dry, the tank is empty. Turn the freshwater pump off from the main switch panel and refill the tank.

Consider that you may not be able to fill up the freshwater tank if the boat is not level. The trim and how the boat is loaded affect the tank capacity. Always add an extra 20% reserve to the expected fresh water consumption for the trip.

Maintenance

- Check and clean the pump filter regularly. The filter is located next to the pump.
- Check and clean the tank with water once a year. You can access the tank from the hatch below the front cabin bed.

4.10 Septic system

You can choose to equip your boat with a toilet and a collection system for septic waste as an optional extra.

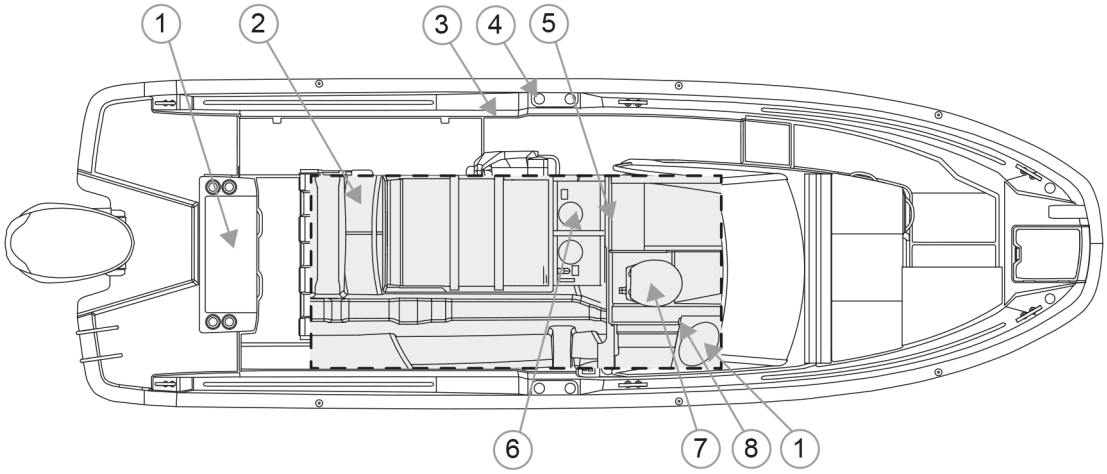


Figure 4.16 Septic system components

1. Sink
2. Septic seacock
3. Manual septic pump
4. Suction fitting
5. Toilet flush water inlet
6. Septic tank
7. Toilet
8. Toilet flush

In some countries, there is no septic seacock and the fresh water is directed to the septic tank.

4.10.1 Using the septic system

The toilet is powered by electricity and uses seawater for flushing.

Using the toilet

1. Open the tap of the toilet flush water inlet seacock.
2. Flush the toilet from the flush button.
3. Close the seacock tap after use.

It is recommended that you always keep the toilet flush seacock tap closed when toilet is not in use.

NOTICE

The toilet can easily get clogged and damaged.

- Never put any other objects but toilet paper in the toilet.
- Do not under any circumstances flush down paper towels, fabric, hard objects, rubber, oil or solvents.
- Do not pour hot water into the toilet.

NOTICE

Environmental hazard! The sink is directly connected to the sea.

Do not pour soap or any other substances harmful to the environment down the sink.

Maintenance

- Flush the toilet system thoroughly with fresh water when the boat is not in use.
- Before the boat is laid up for winter storage, clean the whole system and flush it through while the boat is still in the water.
- To prevent frost damage, bacteria growth and smells, drain the system thoroughly when lifting the boat out of the water.

NOTICE

- The use of antifreeze is not recommended.
- If you use chemicals cleaning the septic tank, make sure they are suitable for aluminum.

4.10.2 Septic waste disposal

The contents of the toilet empty out into the septic tank located under the deck. You can monitor the level of the tank from the engine multi-function panel.

To empty the septic tank into a permanent septic tank ashore:

1. Make sure the seacock taps in both the septic seacock and toilet flush water seacock are closed.
2. Attach a suction hose from the shore tank to the suction fitting labeled “Waste”.
3. When the hose is tightly in place, turn on the pump of the septic tank on the shore.
4. Press the suction hose tightly against the fitting during suction to prevent any septic waste from spilling onto the deck and the hose.
5. When finished, close the cap of the suction fitting and put the hose back in place.

⚠ CAUTION

The septic waste suction fitting maybe located next to the fuel or fresh water filling inlets, depending on the features you have selected.

Do not mix up the different inlets.

Ensure that the caps to the other inlets are tightly closed when emptying the septic tank.

NOTICE

Environmental hazard! Do not empty the septic tank into the sea. It is against the law in many countries and against good seamanship practice. In order to have the toilet usable at all times:

- Constantly monitor the level of the septic tank from the engine multi-function panel.
- Plan your trip well with the locations of shore septic services in mind.

In an unavoidable situation, the septic tank can be emptied straight into the sea with the septic pump (not available in some countries).

To empty the tank:

1. Open the seacock tap.
2. Pump with the handle of the manual septic pump until the tank is empty.
3. Close the seacock tap when finished.

4.11 Other fixtures and fittings

4.11.1 Heater

You can choose to equip your boat with a diesel heater as an optional extra.

Using the heater

Turn the heater on from the heater control unit. For instructions for use and maintenance, see the manufacturer's manual.

⚠ WARNING

Risk of fire and carbon monoxide poisoning.

- Before turning the heater on, check that the warm air outlet is open and the heater's exhaust pipe is not covered or touched by anything.
- Do not fasten fenders to the middle cleat or cover the exhaust pipe with anything.
- Ensure good ventilation to avoid breathing in discharge of toxic combustion from the diesel fuel.
- Never leave the boat unattended when the heater is in use.
- Do not switch off the heater's direct supply current on the main switch panel before you have made sure that the appliance has cooled down.

4.11.2 Wet bar

The wet bar has a sink and compartments for garbage and storage. Depending on the boat model and selected accessories, it can also include a cooker or a grill and a freshwater tap.

⚠ CAUTION

Do not close the top cover before the cooker or grill has cooled down.

Always keep the top cover closed when underway.

4.11.3 Gas cooker

The wet bar and/or the cabin can be equipped with an LPG-fueled gas cooker. The cooker comes with LPG hoses and a valve.

Quarken does not provide the LPG cylinder, pressure regulator and pressure gauge, which are needed for the system to be fully functional.

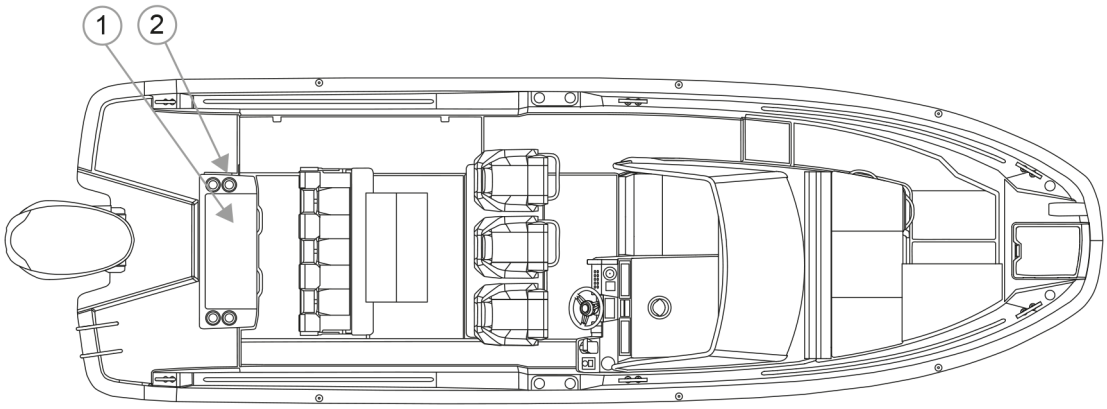


Figure 4.17 LPG system for gas cooker

1. Gas cooker (on the wet bar)*
2. Storage for LPG cylinder

*Optional

Using the gas cooker

⚠ WARNING

An open-flame appliance always poses a risk of fire.

- Never leave the cooker unattended when in use.
- Never smoke or have an open flame when the appliance is in use and when replacing the cylinder.

⚠ WARNING

In a confined space there is a risk of carbon-monoxide poisoning as the gas cooker consumes cabin oxygen and releases combustion substances.

- Ensure proper ventilation in the cabin when the appliance is in use. Open ventilation openings. Never obstruct them.
- The ventilation has been designed for LPG appliances as installed. Additional ventilation may be required if you use other appliances simultaneously.
- Do not use the cooker for heating confined spaces.

⚠ WARNING

Leaks contain a risk of fire and carbon-monoxide poisoning.

- In case of a leak, immediately shut off the main LPG supply valve and discontinue using the cooker.
- Never use a flame to check for leaks.
- Do not use solutions containing ammonia for manual leak testing.
- Do not use an installation that has leaked until it has been inspected and repaired by a competent person.

Before using the cooker, make sure that:

- The cylinder is properly hooked onto the hose.
- The conditions are stable with no high angles of heel to be expected.

It is recommended that you use a gas detector alarm.

Follow the cooker manufacturer's recommendations on the maximum operating pressure of the cylinder.

For detailed instructions for use, see the manufacturer's manual.

Storing cylinders

⚠ CAUTION

Always keep the LPG cylinders, pressure regulator and pressure gauge in the dedicated LPG locker.

Always make sure that the LPG supply line valves and cylinder valves are closed:

- When the cooker is not in use
- Before replacing a cylinder
- Immediately in an emergency.

Keep empty and reserve cylinders closed and disconnected. Always store them in the dedicated LPG cylinder lockers.

Do not use the LPG cylinder lockers for storage of any other equipment.

Maintenance

Do not modify the craft's LPG system yourself. Installation, alterations and maintenance must be performed by a competent person.

Have the system inspected at regular intervals or as required by national requirements.

4.11.4 Swivel seat

Your boat is equipped with swivel seats for the driver and the front passenger.

Using the seat

The seats have two handles, operated by pulling. One handle allows the seat to move backward and forward, the other lets you rotate it.

⚠ WARNING

Risk of serious injury or death.

Make sure the handles are in the locked position before the boat reaches a speed of ca. 4.3 kn (8 km/h or 5 mph). Failure to do so can result in ejection from the seat.

4.11.5 Furnishings

Your boat has been designed in a modular way so that you can arrange the sofas and tables in the large social areas in different ways.

The front cabin is equipped with beds and matresses for two people.

The cockpit has seats for 5 people and an electrically operated table. The table controls are located on the aft wall of the galley.

There is also an option for 1-2 tables with 3 different mounting points in fore and aft decks.

There is a storage for the tables under aft deck heads.

For an up-to-date list of accessories, visit www.quarken.com or enquire more from your dealer.

5 Measures before and after use

5.1 Checks before setting off

The driver is responsible for safety on board. This checklist can help you ensure a safe and enjoyable trip for yourself and the passengers.

Planning your trip

- Check the weather forecast. Assess its suitability for the boat's design category and your own boating skills.
- Have a personal flotation device for each passenger.
- Make sure you have a chart of the area and a compass.
- Check that the weight, including luggage, passengers and fuel will fit within the allowed load.
- The maximum number of passengers allowed on board will not be exceeded.

Safety checks before leaving

- Everyone is wearing a personal flotation device.
- There are fire extinguishers and they have not expired.
- You have the necessary lines for mooring and an anchor.
- If there is a heater, there is sufficient ventilation and the heater exhaust pipe is not covered.
- Everyone on board has a clear understanding of the manouvering operations.

Drainage and hatches

- There is no water, fuel or oil leaks in the bilge.
- The bilge pumps work.
- Deck draining system is clean and the seacocks are open.
- All deck hatches are tightly shut.
- The drain plug on the bilge drain hole is closed (in US only).

Equipment and fuel

- All the lines and fenders are well fastened on the inside of the boat.
- The load is well distributed and heavy items are well secured low down.
- All loose equipment is well fastened, including lightweight items.
- There is enough fuel for the trip and an adequate amount of reserve fuel in case of bad weather or change of plans.
- There is no water in the fuel filter.
- There is enough diesel fuel, if you have a heater.

Engine and electrical system

Before starting the engine:

- Check that the engine and propeller are free to move and rotate.
- Turn on all three main switches.
- Check that all the fuses are working.
- Check the functioning of the steering system.
- Remove the cable from the shore power supply.
- If the boat has an engine shut-off switch, attach it to yourself.

After the engine has started, check that the engine cooling water flows correctly.

Navigation system

Turn on and check the functioning of:

- The navigation lights and anchor light. If it is dark, turn them on.
- The navigation equipment.
- The bow thruster.

5.2 After using the boat

This checklist helps you remember some of the important things when returning from a trip.

Mooring

- The boat is fastened correctly.
- There are at least two fenders on each side of the boat.
- The stern of the boat is not facing an open body of water.
- You consider the changing tide and weather conditions.

Drainage and hatches

- The seacocks of the septic tank and toilet are closed.
- The drain holes are not blocked and the deck drainage works properly.
- All deck hatches, windows and doors are closed tightly.
- The bilge has no water in it.

Power and devices

- Turn the engine off.
- Turn off all the equipment from the steering console.
- Turn off the main switches if you leave the boat for longer than one hour.
- Ensure that direct supply switches are switched on.
- Check that the bilge pumps work.
- If you have shore power, connect the boat to a shore power system.

6 Handling your boat

This section does not provide general instructions on how to handle a boat. It is your responsibility as the owner or driver of the boat to ensure that you have the necessary skills for handling the boat. If needed, your dealer or local yacht clubs can help you find a suitable course.

6.1 Lifting and trailering

Your boat has a compact width, designed for trailering as regular transport.

Local restrictions may apply. Check the regulations specific to your area. For exact dimensions, see section *9.2 Technical specification on page 77.*

Figure 6.1 Location of supports

Pay attention to the correct location of lifting and trailering supports, as indicated in the diagram.

1. Lifting strap locations
2. Cradle location
3. Fastening eye

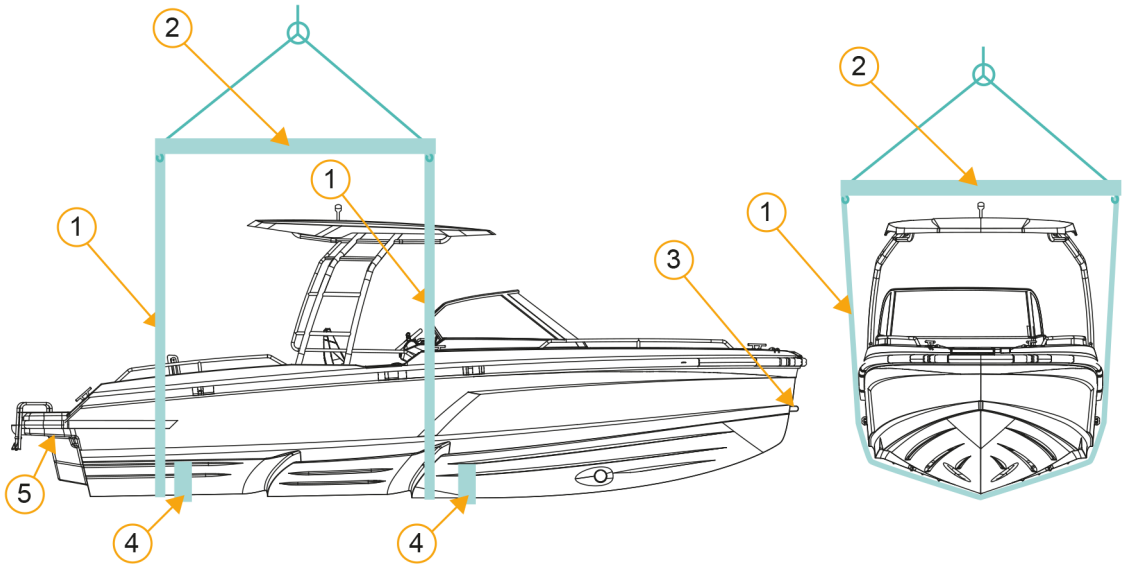


Figure 6.2 Location of supports

1. Lifting strap location
2. Lifting bar
3. Fastening eye
4. Cradle location
5. Fastening hooks (2 pcs)

Commission only a reputable lifting company or a boatyard with sufficient lifting capacity to lift the boat. Pay attention to the following:

- Always keep the engine up when lifting or trailering the boat.
- Consider the boat's load capacity and use a sufficiently steady and suitably sized trailer.
- Make sure the trailer's side supports carry the majority of the boat's weight and there is no local weight impact.
- Place the trailer side supports approximately 10 cm in front of the straps and make sure that the boat does not sway sideways

⚠ WARNING Do not stay under the boat when it is hanging from the crane.

⚠ CAUTION Do not use aft cleats when fastening the boat to a trailer. The end covers of the rub rail can break from the fastening straps under pressure. Use the fastening eyes in the bow and the hooks in the aft.

NOTICE

The stepped hull has sharp edges which can easily get damaged. Handle the boat with care:

- Make sure the lifting straps do not slip into the grooves of the stepped hull.
- Use a multi-roller trailer.
- Do not push the boat into the water. Always bring the trailer far enough into the water so that the boat floats freely before releasing it.

NOTICE

The boat's frame cannot sustain pressure from straps squeezing into the structure.

- Always use a lifting frame wider than the width of the boat.
- Never attach the strap ends to one hook.
- Make sure the straps do not touch the roof structure. Do not lift the boat from its roof.

NOTICE

The fastening eye is not designed to resist strong lateral forces.

Do not use the fastening eye for mooring. Only use it for trailering.

6.2 Stability and loading

Your boat meets the highest standards for stability thanks to its hull design and weight distribution. However, stability may be compromised by:

- Weather conditions beyond your boat's design category and your own boating skill level. High breaking waves always represent a serious danger to stability. In rough weather, keep all hatches and doors closed to minimize the risk of flooding.
- Freely moving water in the bilge. Keep the amount of bilge water to a minimum.
- Towing or being towed.
- Any change to the boat’s centre of gravity, such as imbalances in weight distribution, weight in a high position, or a new engine type.

Make sure you understand and consider these risks.

The boat manufacturer disclaims any liability for the consequences of unauthorized modifications or inappropriate use of the boat.

⚠ WARNING

The boat can sink if the stability or load limits are compromised.

- Never exceed the maximum recommended number of persons on the boat.
- Always have your crew use the seats intended for passengers.
- Make sure that, regardless of the number of persons on board, the total weight of the persons on board and their luggage never exceeds the maximum load capacity of the boat.
- Always load the boat carefully and distribute loads appropriately to maintain the design trim. Avoid placing heavy weights high up.

The maximum number of people and the load capacity are indicated on the Builder's plate located by the steering wheel. These values are also included in the description of the technical specifications.

The designated seating areas are given in the diagram in section *2.5.1 Designated seating and moving areas on page 21.*

6.3 Driving and navigating

As the driver of the boat, you are responsible for ensuring that you and your crew take safety seriously. This includes:

- Acquiring the necessary boating and navigation skills before setting out to sea.
- Understanding the safety features and limitations of the boat.
- Behaving responsibly.
- Obeying the navigation rules of the International Regulations for Preventing Collisions at Sea (COLREG).

Carefully read section *2 Safety on page 8* for more details.

Visibility

The visibility from the steering position can be compromised due to:

- Trim and speed of the boat.
- Sea conditions or interior lights.
- Obstacles in the driver’s field of vision.

Always make sure that the visibility from the steering position is as good as possible:

- Make sure passengers sit in the designated seating areas. Place equipment and curtains so that they do not interfere with the visibility.
- Always adjust your speed to the circumstances and your surroundings. Do not drive continuously on the edge of planing speed.
- Use windscreen wipers when necessary.
- Use navigation lights in poor visibility and in the dark.
- Keep an eye on the stern for passing vessels, especially in ship fairways.

Trim and maneuvering

The running trim heavily affects both the handling characteristics and the fuel consumption of the boat.

The primary means of adjusting the vertical trim is the engine. You can also change the running trim by adjusting the trim tabs and the positioning of the crew.

The boat's two-stepped hull construction affects the boat's driving characteristics and trim behavior by creating air pockets between the hull and the water. This reduces friction, providing many benefits:

- Better fuel economy.
- More comfortable ride with softer landing and less splashing.
- Consistent plane with improved visibility.
- Easier maneuvering at any speed.

Get to know your boat's driving characteristics.

6.4 Anchoring, mooring and towing

Only use the designated fastening points for mooring, towing, anchoring and water sports. Ensure that you have the required skills for handling the boat in these situations.

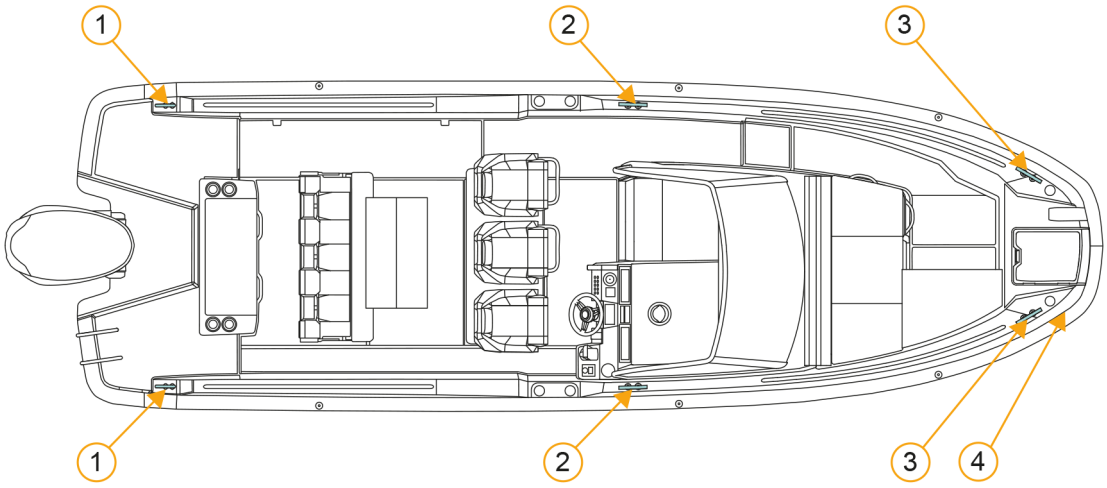


Figure 6.3 Designated fastening points

1. Rear cleats
2. Middle cleats
3. Front cleats
4. Locking eye

It is the owner's or operators responsibility to ensure that mooring and towing lines, anchor chain(s), anchor lines and anchor(s) are adequate for the boat's intended use.

The tensile strength of the lines and chains must not exceed 80% of the fastening point force rating.

The recommended line, chain and anchor types, and their strenght ratings are described in the technical specifications.

NOTICE

The fastening eye is not designed to resist strong lateral forces.

Do not use the fastening eye for anchoring, mooring or towing. Only use it for trailering.

⚠ WARNING

Never use the roof structure for anchoring, mooring or towing. The boat can capsize.

Anchoring and mooring

For anchoring, use the rear or front cleats.

When mooring and attaching fenders, you may use any of the cleats. Have at least two fenders on each side of the boat. Make sure the fenders are big enough.

Never attach lines to the roof structure.

⚠ CAUTION

The boat has an open stern and can easily flood.

- Find a sheltered place in an inlet or behind a jetty.
- Make sure that the stern is not facing an open body of water.
- When reversing, make sure that the deck does not get flooded from the waves.

Towing

When towing, use a sufficiently strong, floating towing cable.

- When towing another boat, use both rear cleats.
- When being towed by another boat, use both front cleats.
- Do not use the rear cleats for water sports. Only use the water ski pylon (optional accessory).

⚠ WARNING

Towing affects the stability of the boat. When towing or being towed:

- Drive slowly.
- Do not tie the line in a knot. Always tie the line so that it can be instantly released under load.
- Do not tie the line to the roof structure.

⚠ CAUTION

Do not exceed a speed of 10 knots when being towed or towing another craft.

⚠ CAUTION

When using the boat for water sports, you must understand your responsibilities and the risks involved.

7 Caring for your boat

7.1 Regular servicing and repairs

It is important to have your boat professionally serviced to ensure safety and the validity of the warranty. Using an authorized servicing company for regular maintenance and in fault situations ensures that your boat will serve you and give you pleasure for years to come.

- For minor maintenance tasks and repairs, see section *4 Operating your boat on page 29* in this manual, as well as the boat equipment manufacturers' manuals included in the Owner's bag.
- You can repair minor damages to the gelcoat of the hull or deck yourself. However, for a flawless result, a professional workshop is recommended.
- If the engine or some other equipment is damaged, contact the dealer or the component manufacturer.

⚠ CAUTION Maintenance, repair and installation of electrical devices may pose a risk of electric shock.

- Always turn off the current from the main switch panel.
- When replacing an electrical device, make sure the new one is compatible with the voltage on your boat.
- Do not work on an energized AC system.

7.2 Surface maintenance

To keep the hull top sides and deck surfaces in a good condition:

- Wash and wax them regularly.
- Use mild polishing compounds to treat scratches.

To care for the hull bottom:

- Wash the bottom immediately after bringing the boat out of the water, so that dirt does not dry onto the surface.
- Paint the bottom with anti-fouling paint when necessary.

NOTICE Strong solvents may damage the gloss of the gelcoat surface.

- Wash the surfaces with a special boat cleaning agent.
- Do not use silicon-based waxes.

NOTICE Do not use substances harmful to the environment. Follow local regulations about acceptable cleaning agents, waxes and paints.

7.3 Winter upkeep

When preparing your boat for winter layup:

- Have it professionally serviced by an authorized boatyard.
- Empty and clean the septic and fresh water tanks. Leave the valves of the seacocks half open.
-
-
- Wash lines with fresh water.
- Remove the drain plugs.
- Charge the boat's batteries with a shore power charger or remove them for winter storage.
- Empty and clean the refrigerator inside. Turn on the vent function in the door of the refrigerator. Close the door and switch power off from the refrigerator. For more information, refer to the manufacturer´s manual.
-

If you store your boat outdoors:

- Remove textiles and any equipment that may get damaged in the damp.
- Remove electrical equipment and spray the connections of the electrical wiring with a protective agent.
- Cover the boat so that snow cannot get into the boat. A suitable size for a tarp is 10 X 6 m.

NOTICE

The boat's surfaces can get damaged by the tarp ropes and heavy snow. Make sure that:

- The ropes do not touch the boat.
- The boat is well ventilated under the tarp.
- Snow does not accumulate on the tarp.

8 Considering the environment

Protecting the marine environment is a shared responsibility. This means not only following environmental regulations, but also behaving responsibly beyond the rules.

The International Convention for the Prevention of Pollution from marine vessels (MARPOL) prohibits the dumping of oil, plastic, solid waste and chemicals. Many countries have their own environmental regulations with hefty penalties for disobeying them.

Tips for complying with rules and for respectful behaviour:

- Waste disposal
  - Do not throw garbage and waste into the waterways or on the shore.
  - Do not pour soap or any other substances harmful to the environment down the sink.
  - Never pump the bilge contents into the sea, if the bilge water is not clear. Use a separate container and discard it as problem waste.
  - Do not empty the septic tanks into the water. Constantly monitor the level of the septic tank and plan your trip with the locations of shore septic services in mind.
- Avoiding spilling contaminants:
  - Check the bilge water regularly for contaminants such as oil, diesel, and glycol.
  - Take care not to spill fuel, oil, detergents and solvents into the water. Keep oil absorbent material on board at all times for use in case of a spill or leakage.
  - Do not overfill the tank. Make sure the fuel does not overflow into the sea from the fuel ventilation opening.
  - Do not use substances harmful to the environment when caring for your boat. Follow local regulations about acceptable cleaning agents, waxes and paints.
- Minimizing exhausts and disturbance:
  - Have your engine professionally serviced and run it at an economical speed.
  - To reduce fuel consumption and to avoid disturbing other people, do not idle or rev the engine unnecessarily.
  - Drive slowly to avoid erosion and disturbance caused by backwash from boat waves.

9 Reference

9.1 Terms and abbreviations

Term/abbreviation/acronym	Definition
Aftdeck	Deck area in the rear part of the boat, social area
Bilge	Lowest point of the boat's inner hull
Bow	Front end of the boat
Foredeck	Deck area at the bow of the boat
hp	Horsepower, unit of engine power (1hp = 0.75 kilowatts)
Hull	Boat's frame
kN	Kilonewton, unit of force
kn	Knot, unit of speed in the nautical industry (1 kn = ca. 0.51 m/s or 1.15 mph)
LPG	Liquefied petroleum gas
Port	Left side of the boat
PFD	Personal flotation device
STB, starboard	Right side of the boat
Steering position	Driver's seat and steering equipment, helm station
Stern	Rear end of the boat
Superstructure	Areas above the deck; e.g. tables, seats, cabin, steering console
Transom	Vertical section at the stern of the boat

9.2 Technical specification

General specifications	
Boat model	Quarken 27 T-Top
Purpose of use	Recreational
Engine	Yamaha F300 NSB2 outboard engine. The engine model is marked on a label attached to the engine.
Max engine power	221 kW (300 hp)
Max number of passengers	9
Number of beds	2 persons
Design category	C - Coastal
Max speed	
Material	Fiberglass
Certification	See Declaration of Conformity
Conformity to standards	See Declaration of Conformity

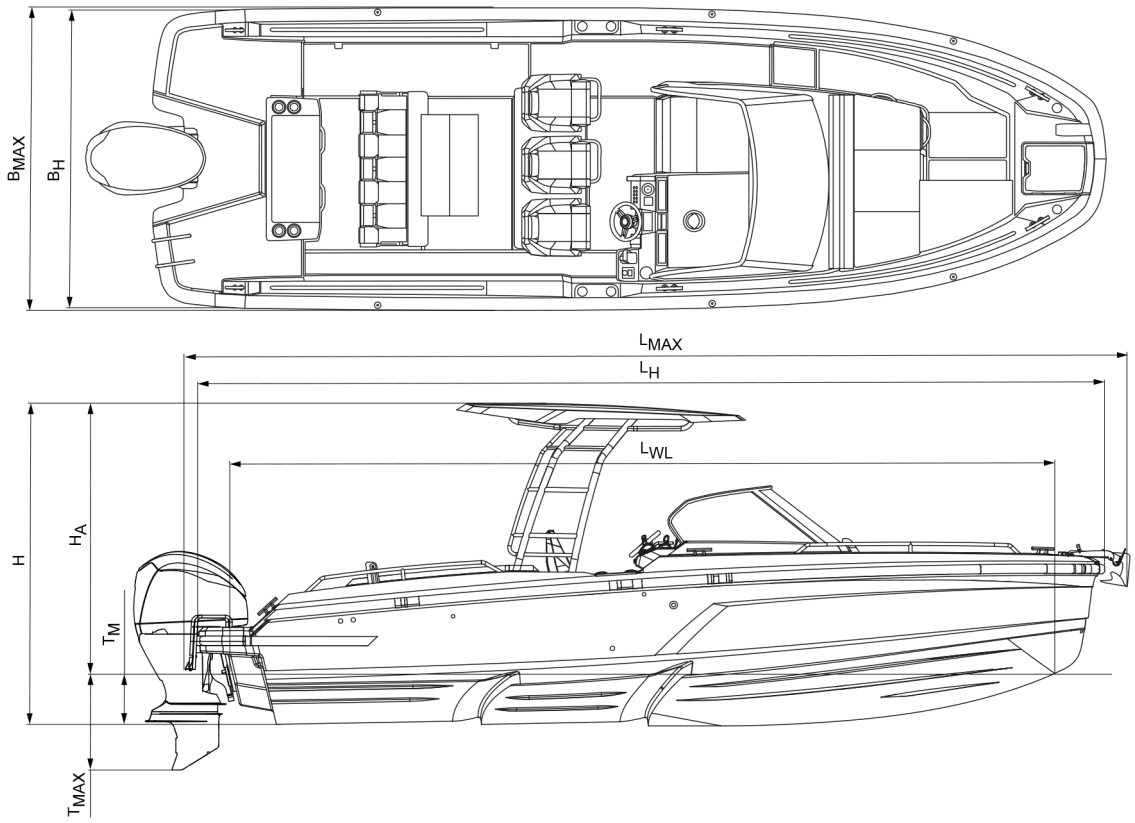


Figure 9.1 Q27 T-Top V2 Onyx dimensions

Dimensions	m	ft
Maximum beam (B_{MAX})	2.59	8.497
Hull beam (B_H)	2.52	8.26
Maximum length (L_{MAX})	8.51	27.92
Hull length (L_H)	8.16	26.77
Length on waterline (L_{WL})	7.43	24.38
Maximum draft (T_{MAX})	0.86	2.8
Hull draft (T_M)	0.45	1.48
Height (H)	2.89	9.48
Height from waterline, without light mast (H_A)	2.85	9.35

Weight and maximum recommended load	Details	kg	lb
Empty craft (m_{EC})		1923	4251
Boat weight without load (m_{LC})	**Maximum trailering weight, of which:**	2352	5184
	Minimum operational equipment	111	
	Engine		
Maximum load (m_{MTL})	**Of which:**		
	Total person mass. Calculated average: • Adult 75 kg (165 lb) • Child 37.5 kg (83 lb)		
	Personal luggage and stores		
	Edible stores and provisions		
	Gasoline		
	Fresh water	43	94
	Septic waste		
Boat weight with maximum load (m_{LDC})			

Tank capacities	L	gal
Gasoline fuel tank	300	79
Fresh water tank	45	12
Septic tank	40	10.5
Diesel tank	30	7.9

Bilge pump output capacities	L/s	gal/min
Electric bilge pump	41	650
Manual bilge pump	33	530

Recommendations for mooring, anchoring and towing	
Line types for mooring and towing	• Polyamide, polyester and nylon lines 12 mm (0.47 in)
Anchor chain type	• Diameter 8 mm (0.3 in) • Length 3-5 m (10-16 ft)
Strength ratings for mooring, towing and anchoring lines	• Towing and anchoring from front cleat: 34 kN • Mooring forward force rating for front and centre cleats: 28 kN • Mooring rearward force rating for the back cleat: 24 kN
External anchors	• Main anchor minimum 7.5 kg (16.53 lb) • Secondary anchor 5 kg (11 lb)